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ABSTRACT

This Technology Learning Activity (TLA) for exploring therapeutic care careers is designed for use in eight class periods. It exposes students to the different types of therapeutic care and helps them understand how they can be used to treat and heal. This teacher's edition begins with an overview of technology education. The second section describes components of the instructor's section of the TLA: background information; priority academic student skills; suggested activities; suggested resources; instructional sequence; equipment, tools, and supplies summary worksheet; pretest and posttest; test answers; and evaluation summary. The third section describes components of the student's section: introduction; summary of activities; pretest instructions; assignments to turn in; goal; words you should know; priority academic student skills; objectives; related Technology Student Association event(s); academic and workplace applications; impact statements; career search; posttest instructions; and Skunk Works (optional activity). The fourth section identifies hazard alert messages. The actual instructor's and student's sections follow. Activities include the following: research career opportunities; perform active range of motion exercises; assist patient in walking with crutches; use professional materials to research and report on therapeutic/rehabilitation procedures; explore how to use creative arts; calculate caloric value in meals; and research and select a list of resources for visually impaired students making the transition from high school to college. (YLB)

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ED 410 449

Technology Learning Activity

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CIMC

Teacher Edition

Oklahoma Department of
Vocational and Technical Education
500 West Seventh Avenue
Stillwater, Ok 74074-4364

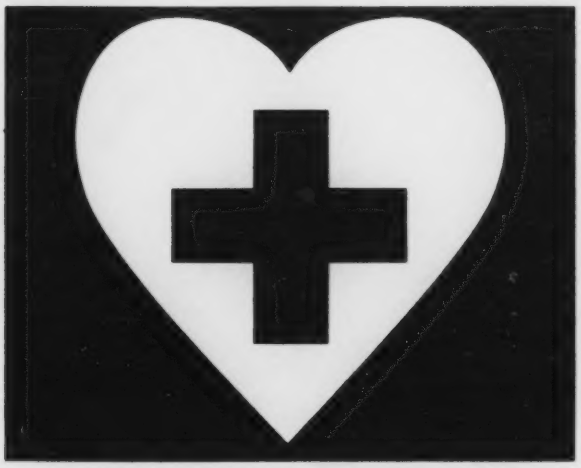
TECHNOLOGY EDUCATION

TECHNOLOGY LEARNING ACTIVITY

TE1209

Therapeutic Care

Suggested Time: 8 Days



Developed by the
Curriculum and Instructional Materials Center
for the Technology Education Division
Oklahoma Department of Vocational and Technical Education

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FOREWORD

What will be the careers of the future? The workforce of tomorrow will be shaped by the technologies being developed today. Students today need accurate, interesting information on growing technologies in order to make informed decisions about their futures.

It is our hope that this curriculum will help improve the quality of career decisions for our students. Students are introduced to a wide range of current, "cutting-edge" technologies and are encouraged to think critically about how those technologies influence their lives and futures. Today's students do not have to become the victims of "technological illiteracy," but instead can learn to anticipate technological developments and take positive steps to prepare for the future.

Technology Learning Activities provide students with the knowledge and an introduction to the skills they need for a positive learning and career experience. Every generation is faced with learning how to manage technological advances. Information gained through participation in the Technology Education program can help students develop a holistic view of technology on which to base their educational and career decisions.

Roy Peters, Jr., Ed.D., State Director
Oklahoma Department of
Vocational and Technical Education

Lynn Hawkins, State Program Administrator
Technology Education
Oklahoma Department of
Vocational and Technical Education

PREFACE

We believe that one of the most effective ways to improve education is through the development and implementation of a sound instructional materials system. Technology Education instructional materials represent a new design for CIMC which recognizes the importance of graphic materials in the learning process.

Technology Education instructional materials are designed for 6th through 10th grade students. The design of these materials is based on current research on how people read and gain information from documents. The design is called "New Look" and integrates both graphics and text into a balanced presentation which is easy to use and follow.

Technology Education provides the student a look at what the world will be like in the future based on technologies in use and being developed today. Throughout the Technology Education instructional materials, the students are introduced to "cutting-edge" technologies that they will use and encounter in a working environment later in life. This exposure gives them a wide range of experiences on which to base career decisions.

This publication is intended as a starting point, from which the teacher can innovate, localize, and personalize in order to prepare students for their future. The Technology Education series of Technology Learning Activities was written with the realization that we are creating the workforce of tomorrow by how and what we teach about technology today.

Len Haymans, Instructional Dedvelopment Specialist
Curriculum and Instructional Materials Center
Oklahoma Department of
Vocational and Technical Education

ACKNOWLEDGEMENTS

The Curriculum and Instructional Materials Center (CIMC) extends its appreciation to those individuals who played important roles in the development of Technology Learning Activity materials.

Thanks is also extended to Lynn Hawkins, formerly a Technology Education teacher and currently State Supervisor, and Jim Harder, a Technology Education teacher at Mayfield Junior High School, for the time, talent and knowledge they contributed in determining the content of this Technology Learning Activity (TLA).

Thank you is extended to the vocational educators who helped with field testing and contributed their expert input on individualized vocational instructional methods.

Trevor Fieldsend
Stillwater Junior High School

Annett Rust
Putnam City West High School

We also thank the State Director, Dr. Roy Peters, Jr., and the Assistant State Director, Dr. Charles O. Hopkins, for their continued support throughout this project.

The school administrators who supported instructor participation in this project and/or allowed their facilities to be used as field test sites in this project also deserve a special thank you.

Joe Payne
Stillwater Junior High School

Jerry Rickerts
Putnam City West High School

Oklahoma Department of Vocational and Technical Education Technology Education staff who provided leadership and direction on this project also deserve special recognition.

Lynn Hawkins
State Program Administrator
Technology Education

Harold Holley
Program Specialist
Technology Education

Donovan Bowers
Program Specialist
Technology Education

Also deserving special recognition is the Oklahoma Department of Vocational and Technical Education Health Occupations Education staff who provided technical guidance and assistance on this project.

Gail Pearson
Program Administrator
Health Occupations Education

Ruth Eckenstein
Program Specialist
Health Occupations Education

Sandy Mittelsteadt
Program Specialist
Health Occupations Education

Sincerest thanks go to Art Gardner, for writing and formatting this document. His professionalism, dedication, and commitment to quality instructional materials allowed us to design and develop this technical learning activity so that students can readily use to explore new and exciting health occupation technologies.

Only through the close cooperation of the Curriculum and Instructional Materials Center (CIMC) staff was this curriculum developed. Sincere thanks are shared with the CIMC coordinators.

John Friedemann
CIMC Team Leader

Lynna Ausburn, Ph.D.
CIMC Development Coordinator

Special recognition and thanks are also extended to other individuals with the Oklahoma Department of Vocational and Technical Education (ODVTE) involved in the development and distribution process; Bob Davis and staff art Kathryn Moore for the cover design; Darrell Stiles and his staff in the ODVTE Warehouse for packaging and coordinating transportation and distribution of this material.

Finally, a big thanks you to all ODVTE team members who offer their support on a daily basis in ìbehind-the-scenesî ways but never seem to be recognized for their contributions: Suzanne Perry and Terri Tomson, CIMC secretaries; Clara Orr and Beverly Mealer, Technology Education secretaries.

Len Haymans
CIMC Instructional Development Specialist

TECHNOLOGY EDUCATION OVERVIEW

About the Program

Because the American culture is distinctly characterized as technological, it becomes the function of our schools to give every student an insight into and an understanding of the technological nature of the culture. Technology Education strives to perform this function.

Technology Education in Oklahoma is an instructional program that provides young men and women (grades 6-10) with daily, hands-on exploratory experiences and insights into technology and career opportunities so that they can make meaningful occupational and educational choices. It is a program which can enhance the educational experience of all students, whether they are the valedictorian/honor-type student, the middle range/average student, or the student who has found little success in school, namely the at-risk student.

Technology Education acquaints all students with their technological environment so they can make rational decisions about their own lives on a day-to-day basis and participate in controlling their own destiny. The program directs students to related technological and industrial fields, enabling students to realize their full potential and make maximum use of their individual talents in fulfilling career goals in their selected areas of employment.

Technology education capitalizes on the individual's potential for reasoning and problem solving, for imagining and creating, and for constructing and expressing through the use of tools and materials related to technology. It develops content and experiences to contribute to the growth and development of students commensurate with their potential. Thus, Technology Education is a basic and fundamental study for all persons in regard to career explorations and educational opportunities.

TECHNOLOGY EDUCATION OVERVIEW

Opportunities to develop and apply leadership, social, civic, and technologically related skills are provided through the Technology Student Association (TSA). TSA is the appropriate vocational student organization identified as a teaching tool for teachers to use in assisting students to achieve identified course competencies. Competency-based activities are an integral part of the instructional program.

All Technology Education courses are taught in a one-period block of time (45-55 minutes), with each of the four Technology systems (communication, construction, manufacturing, and transportation, energy and power) being designed to provide a means through which other courses such as math, science, English, and social studies can be applied in a practical manner within a technology-based situation. Teaching across the curriculum is vital to the success of a Technology Education program.

TECHNOLOGY EDUCATION OVERVIEW

About the TLA

The Technology Education series consists of 40 Technology Learning Activities (TLAs) for instruction and a supplemental activities book. Each TLA is divided into two parts: an instructor's guide and a student guide. The instructor's guide provides an overview of Technology Education, a summary of activities and supplies needed for students to complete the Technology Learning Activity, a supplies and materials worksheet for the instructor, an overview of the particular TLA, written exam answer sheets, and evaluation summary for the TLA.

Master copies of the evaluation summary sheets, pretest and posttest, and supplies and materials worksheets are provided with this instructors edition of the TLA. These sheets may be reproduced for classroom use.

All of the TLAs focus on measurable and observable learning outcomes. Instructors are encouraged to supplement, personalize, localize, and motivate with these materials in order to develop a complete teaching/learning process.

TLAs are designed for use in more than one class period of instruction. Careful study of each TLA by the instructor will help her or him determine the following:

- >>> Skills to demonstrate
- >>> Supplies and equipment needed
- >>> Amount of time needed for student practice
- >>> Workstation Bookshelf, Instructors Reference Materials, and a bibliography are provided for supplemental resources
- >>> Supplementary materials, including print and non-print media to order
- >>> Resource people to contact

>>> Facility modifications which may be necessary to administer the TLA

Each TLA is based on performance objectives. Performance objectives are specific, stating the performances necessary to meet the goal of the TLA.

The overall goal of the unit tells what the student should be able to do and what standard will be used to determine whether the student has achieved competency. The specific objectives outline the sequence of the competencies required to meet the TLA goal. The competencies may be either cognitive, requiring knowledge only, or psychomotor, requiring knowledge and skill.

TECHNOLOGY EDUCATION OVERVIEW

About Ordering TLAs

Additional TLAs in the Technology Education series may be ordered through the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, OK 74074-4364. Phone 1-800-522-5810.

NOTE: Instructor's Editions have order numbers in the 1100 series (for 8-Day TLAs) and 1200 series (for 6-Week TLAs). Student Editions have numbers in the 3100 series (for 8-Day TLAs) or 3200 series (for 6-Week TLAs).

Corrections and Suggestions

CIMC wants to provide Technology Education instructors and students materials that are accurate and effective. Although the CIMC strives to maintain the highest standards of development and production, oversights occasionally do occur. If you find any errors in this or other CIMC publications or have suggestions for improving their usefulness, please notify the CIMC staff. One easy way of pointing out errors is to make a photocopy of the affected page and indicate the correction on the copy. Mail this information to the CIMC, where it will be used to correct the publication before the materials are reprinted.

To ensure that the material is updated on a timely basis, notify the CIMC of necessary corrections as soon as possible. Do not assume that someone else will notice the error and inform the CIMC; other users may be making the same assumption. Please send corrections and recommendations for improving this publication to the following address:

Curriculum Development Coordinator
Curriculum and Instructional Materials Center
Oklahoma Department of Vocational and Technical Education
1500 West Seventh Avenue
Stillwater, Oklahoma 74074-4364

USING THIS PUBLICATION

Background Information

INSTRUCTOR'S SECTION

The background information component provides instructors with basic information about the subject of the TLA. Instructors are encouraged to use suggested resources for additional information on the specific technology used in each TLA.

Priority Academic Student Skills

There are 14 Priority Academic Student Skills for the Technology Education series. Not every TLA fulfills all 14 Priority Academic Student Skills, so outcomes specific to each TLA are listed in the Instructors Section and in the Students Section. The 14 Priority Academic Student Skills for the Technology Education series are:

- The student will know and appreciate the importance of technology and technological literacy.
- The student will explore career opportunities so they can make meaningful occupational choices.
- The student will explore future educational opportunities so they can make meaningful educational choices.
- The student will apply problem solving and critical thinking techniques.
- The student will apply math, science, reading, and other school subjects in a practical situation.
- The student will develop keyboarding and computer literacy skills.
- The student will develop basic skills in the safe and proper use of tools, machines, materials, processes, and technical concepts.
- The student will think logically and sequentially.
- The student will develop leadership, creative abilities, positive self-concepts, and

individual potential in a technological society.

- The student will develop an understanding and the ability to adapt to those technological forces that influence life in the 21st Century.
- The student will develop an understanding of economic development.
- The student will communicate by making clear and relevant points through the development of mental process skills.
- The student will apply design, imagination, and creative abilities.
- The student will explore the organization and management systems of business and industry.

Suggested Activities

The suggested activities component is designed to assist during the preparation stage of the teaching/learning process. The activities provide suggestions for preparation and evaluation during the instructional process. The instructor should read the suggested activities before assigning the TLAs to allow time to obtain supplemental materials, prepare audiovisual materials, and contact outside resource persons. Duties of the instructor will vary according to the particular TLA.

Suggested Resources

Suggested resources, include people, as well as print and non-print media that may be used with the TLA. References used during the development of each TLA are also provided. The instructor can use suggested resources and TLA references to supplement her or his knowledge of the subject to help students with particular interests or objectives in the area covered. Please note that suggested resources and references listed in this publication existed when this publication was written. CIMC

assumes no responsibility for providing these materials and cannot ensure the availability of these materials as individual vendors, manufacturers, and publishers may discontinue these products at any time.

Instructional Sequence

This component provides instructors with daily lesson plans for the TLA. Included in the instructional sequence component are suggested daily assignments and equipment, tools, and supplies that will be needed for each student. A column for facility requirements or modifications is provided for each instructor. This component is provided as a guide to plan for and monitor students' progress through the TLA.

Equipment, Tools, and Supplies: Summary Worksheet

This component is provided as a planning tools for instructors. It provides instructors with a list of the necessary equipment, tools and supplies to support student activities and provides specific information for budgeting purposes.

Pretest and Posttest

These components provide criterion-referenced evaluation of the objectives listed in each TLA. If objectives or activities have been added, deleted, or modified, appropriate changes should be made on the tests.

Test Answers

This component is provided to assist instructors in evaluating student performance on written tests.

Evaluation Summary

This component is provided to assist instructors in summarizing the performance of each student on an individual basis. The evaluation summary forms are also provided as photocopy masters for the instructors use.

USING THIS PUBLICATION

STUDENT'S SECTION

Introduction

Daily activities are the step-by-step procedures students will follow to complete the learning experience. Each TLA is organized by daily tasks and activities. Students are able to pace their progress through the TLA by referring to the activities for the day.

Within the daily activity pages are components common to all TLAs.

Summary of Activities

A Summary of Activities page begins each day of the TLA. This page provides several important pieces of information for both the student and instructor.

1. In the left column this page provides the student with a list of activities to be accomplished that day.
2. In the right column the major Academic and Workplace Application which applies to that day's activities is graphically indicated with a standard icon.
3. Below the icon is a list of specific skills reinforced during that day's activities.

Pretest Instructions

The students are required to take a Pretest as one of the first day's activities. The instructions for the Pretest are given in this section.

Assignments to Turn In

Day One includes a list of all assignments the students are expected to turn in during or at completion of the TLA. This list includes all tests, activities, and products covered in the TLA.

Goal

On Day One, following the assignments checklist, is a concise statement of the overall goal of the TLA. This statement summarizes the purpose for completing the TLA and encourages the student to think about the broader implications of the learning experience.

USING THIS PUBLICATION	STUDENT'S SECTION
Words You Should Know	The first day's activities includes a glossary of unfamiliar technical terms used in the TLA. Often these terms are necessary for the student in order to accurately follow instructions in the activity procedures. The students should be encouraged to review this glossary and refer to it often during the course of the TLA.
Priority Academic Student Skills Reinforced by this TLA	As stated in the guide to the Instructor's Section, there are 14 identified Priority Academic Student Skills associated with the Technology Education series. This section of Day One activities lists the Priority Academic Student Skills that specifically apply to the TLA. A student who reviews this list will gain a better understanding of the scope of experiences and skills to be gained from the TLA.
Objectives	Each TLA is made up of a set of measurable objectives. In this section on Day One, students are given a list of all the objectives addressed in the TLA. This list can serve to introduce students to the flow of the TLA as they build introductory skills in a technology.
Related TSA Competitive Event(s)	Each TLA may be used by students to begin work toward completion of a Technology Student Association competitive event. Some TLAs are tied to a specific TSA event; other TLAs may be used with several events. This Day One section gives the student and instructor a list of appropriate TSA events which the TLA may support. TSA competitive events promote leadership development, and an understanding that winning isn't everything but involvement is. Events are staged at Local, Regional, State, and National levels.

USING THIS PUBLICATION

STUDENT'S SECTION

Academic and Workplace Applications

The curricular content and activities found in this Technology Learning Activity help students apply academic and workplace competencies. These competencies include: Reading Skills, Writing Skills, Mathematics Skills, Science Skills, Oral Communications Skills, Interpersonal or Relating Skills, Creative Thinking and Problem Solving Skills, Employability Skills, and Social Studies Skills.

Preparing students to enter successfully into today' world . . .

Preparing students to enter successfully into today's world of work offers vocational education a substantial challenge. The contemporary workplace is characterized by constant and rapid technological change and by increasing job complexity and skill intensity. Due to rapid technological advancement, the half-life of work skills is now reduced to a bare three to five years. Out of this new workplace environment has arisen a growing national awareness of the critical importance of an American workforce armed with the skills necessary to survive in a competitive economy.

. . . emergence of a renewed emphasis on basic academic skills . . .

One result of this national awareness has been the emergence of a renewed emphasis on basic academic skills in all areas of education. Pressure to increase academic skill development is being placed on education by both legislative action and industry mandate. The Carl D. Perkins Vocational and Applied Technology Education Act of 1990 sets stringent academic and workplace skill requirements for vocational education. State legislatures are increasingly requiring basic skills accountability by teachers and school administrators.

. . . expected learner outcomes are being implemented with increasing frequency.

Graduation exams, minimum competency requirements, and expected learner outcomes are being implemented with increasing frequency. In addition, business and industry are delivering the message clearly to educators

that vocational competence now requires increased strength in academic and workplace skills.

The issue of basic skills . . . was successfully addressed in a national three-year study . . .

The issue of the basic skills currently required in the work place was very successfully addressed in a national three-year study conducted jointly by the American Society of Training and Development (ASTD) and the U.S. Department of Labor (DOL). The findings of this study were published in 1990 in the book, Workplace Basics: The Essential Skills Employers Want.

. . . research indicates clearly that American employers . . . need a variety of skills . . .

The ASTD/DOL research indicates clearly that American employers have discovered that their workforces need a variety of skills that include, but are not limited to, the classic academic trio of reading, writing, and computation. Employers now are also looking for competence in areas such as "learning to learn," problem solving and critical thinking, interpersonal and teamwork skills, oral communication and listening techniques, and the social and personal management skills that demonstrate a capacity for independence and responsibility in on-the-job performance.

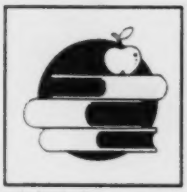
. . . business and industry have expanded and redefined "workplace basics."

It is clear that the requirements of today's business and industry have expanded and re-defined "workplace basics." It is in line with this re-definition, and with the competency requirements of current education legislation, that the Oklahoma Department of Vocational and Technical Education has chosen to address "basic skills" in the instructional materials produced by its Curriculum and Instructional Materials Center.

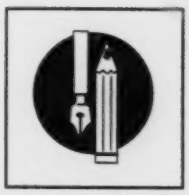
USING THIS PUBLICATION

CIMC materials contain information and activities which develop academic and workplace application competencies . . .

To assist teachers and students in identifying activities which promote academic and workplace skills . . .



READING SKILLS: Skills involving use of print resource material for obtaining and applying information.



WRITING SKILLS: Skills involving written communication of processes, information, or ideas.

STUDENT'S SECTION

It is not a new development for CIMC materials to contain information and activities which develop academic and workplace application competencies in students undertaking vocational programs. What is new is the specific marking, or flagging, of items in our instructional materials that address academic and workplace application skills.

To assist teachers and students in identifying activities which promote academic and workplace skills development, CIMC has implemented a marking system which uses simple graphic symbols, or icons. These icons are located in the right margins of Activity Sheets. The following is an explanation of the icons and the kinds of academic and workplace application activities they indicate.

Current vocational education literature indicates that functional literacy as a workplace basic needs to be defined in terms of reading competencies actually required for job performance. The activities identified with this icon as addressing reading skills in CIMC materials deal specifically with developing reading skills in an applied, job-related context. These range from general information-gathering activities to tasks requiring use of specific technical reference materials. Many contain a "learning to learn" aspect, which promotes engaging actively and purposefully in vocationally relevant enquiry.

Tasks identified with this icon promote development of skills in written communications. As with reading skills, the writing skills emphasized in CIMC materials have a vocational context. They include filling out forms, keeping work activity records, writing simple memos and letters, generating more complex reports and articles, and written

expression of ideas and concepts related to vocational performance or exploration.

MATHEMATICS SKILLS: Skills involving computation, calculation, and interpretation of numerical

This icon identifies activities which develop vocationally-related skills in computation, measurement and estimation, selection and application of appropriate mathematical processes, and collecting, displaying, or interpreting data.

SCIENCE SKILLS: Skills involving mastery and application of scientific information or theory.

This icon marks activities which are related to the development of skills in either the physical or biological sciences. These skills stress occupationally-related applications of science and technology.

ORAL COMMUNICATION SKILLS: Skills involving speaking and listening.

Activities marked with this icon promote development of effective speaking and listening. They include practice in such areas as speaking techniques, word choice, non-verbal messages, use of communication media, and using active listening techniques. Many of these activities promote "learning to learn" skills in verbal enquiry.

INTERPERSONAL OR RELATING SKILLS: Skills involving working and getting along with others.

Activities which deal directly with skills in relating to others are marked with this icon. This includes areas such as multi-cultural awareness, group processes and dynamics, negotiation, dealing with conflict, cooperation and teamwork, values and attitudes, and leadership and motivation.

USING THIS PUBLICATION

CREATIVE THINKING AND PROBLEM SOLVING SKILLS: Skills involving comprehending, applying, analyzing, and developing complex ideas and situations.

STUDENT'S SECTION

This icon identifies activities which stress development of higher-order thought processes such as problem identification and analysis, lateral thinking, evaluating alternatives, developing solutions, examining assumptions, and evaluating outcomes.

EMPLOYABILITY SKILLS: Skills involving choosing, obtaining, and succeeding in a career.

Activities marked with this icon relate to competencies required to obtain employment and develop a career. These competencies include specific occupational tasks. They also include items such as career analysis and selection, job searching, completing applications and resumes, interviewing, and business etiquette and personal management skills required for job-keeping and maturing in one's work. Examples include personal presentation, self-discipline, work accuracy, reliability, discretion, punctuality, stress handling, judgement, confidence, etc.

SOCIAL STUDIES SKILLS: Skills involving investigation and application of social

This icon marks activities which stress competencies in fields relating to human society and its distribution and relationships. This includes areas such as history, geography, government and politics, economics, psychology, sociology, demographics, current events, cross-cultural studies, consumer issues, environmental issues, and ethical concerns in science and technology.

USING THIS PUBLICATION

Impact Statements

STUDENT'S SECTION

There are five areas of human culture for which each TLA has an impact. These impact statements appear during Day Eight, after the student has gained some familiarity with the technology.

1. ENVIRONMENTAL IMPACT: A statement introducing the student to the impact of the technology on the environment.
2. SOCIAL/CULTURAL IMPACT: A statement concerning the impact of the technology on society and culture.
3. ECONOMIC IMPACT: A statement concerning the impact of the technology on the economy.
4. POLITICAL IMPACT: A statement concerning the impact of the technology on politics, laws, and regulations, and the impact of politics on the development of the technology.
5. ERGONOMIC IMPACT: A statement concerning the ergonomic implications of the technology. Ergonomics is the study of developing products and systems that meet peoples' needs.

Impact Statements offer the student the opportunity to see beyond the activities in the Technology Learning Lab and glimpse the real-world applications of the technology.

USING THIS PUBLICATION	STUDENT'S SECTION
Career Search	Also on Day Eight, the students are given the assignment of investigating several career opportunities related to the technology of the TLA. The investigation is done with Career Search Abstracts. A list of up to five careers related to the TLA is given, followed by pages from Career Search Abstracts that detail the career qualifications and work environment. The student is required to choose two of the five related careers, read the appropriate abstracts, then write a short essay about why those careers may be appealing.
Posttest Instructions	The students are required to take a Posttest as one of the last day's activities. The instructions for the Posttest are given in this section. The score for the Posttest may be compared to the score for the Pretest to help determine the student's gain during the TLA.
Skunk Works	Skunk Works, a Day Eight optional activity, includes instructions that could be used for solving problems or reinforcing the enrichment of learning. The term Skunk Works was coined by engineers at 3M Corporation in the mid-1960s. Some engineers wanted to develop a new product, but company management would not give them the time or money to work on the project. So the engineers "borrowed" time and money from approved projects to work on their "Skunk Works." When they finished developing the product, they presented it to management and it has been a 3M product ever since. The product: Velcro fasteners.

HAZARD ALERT MESSAGES

The Daily Activities include hazard alert information specific to the Activity. These messages should be discussed carefully and thoroughly. The Hazard Alert Message system used in the TLA is based on the American National Standards Institute (ANSI) Standard Z535, which provides for five levels of alert.

Students are introduced to the ANSI Hazard Alert Message system as an activity in the Laboratory Safety for Construction Technology TLA (TE1107/TE3107). This system was adopted by ANSI as the standard in 1990 and will be the hazard alert system in use when students reach the workplace.

Hazard Alert Messages in the TLA are indicated both by the color red and graphically. There are three types of hazard alert graphics used in the TLA: the hazard alert symbol, injury hazard graphics, and avoidance graphics.

This Hazard Alert Symbol is used with the words **DANGER, WARNING,** and **CAUTION.** ANSI defines these words as:

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

HAZARD ALERT MESSAGES

There are two types of graphics used in conjunction with the hazard alert symbol. This type of graphic depicts a specific injury that may be expected if the hazard described in the alert is not avoided.

This second type of graphic is called an avoidance graphic. It depicts an action the student should take in order to avoid injury.

There are two other ANSI words used in the TLAs and the students should understand their meanings:

NOTICE indicates an action that could result in damage to property or equipment.

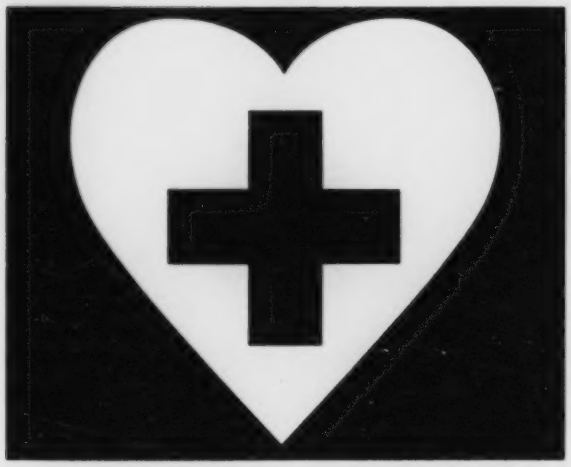
IMPORTANT indicates an instruction that can help the student do a better job.

TECHNOLOGY EDUCATION

Therapeutic Care

TE 1209/3209

INSTRUCTOR'S SECTION



BACKGROUND INFORMATION

People often think of therapeutic care as being limited to physical therapy. While that is an important component, and one your students will experience in this TLA, it is not the only category of physical therapy.

Therapeutic care includes everything from radiology treatments to use of the creative arts. It takes a holistic approach to health care; it properly views the mind and body as being one. And the range of activities in this TLA expose students to the different types of therapeutic care and helps them understand how they can be used to treat and heal.

INSTRUCTOR'S SECTION

PRIORITY ACADEMIC STUDENT SKILLS

- The student will know and appreciate the importance of technology and technological literacy.
- The student will explore career opportunities so they can make meaningful occupational choices.
- The student will explore future educational opportunities so they can make meaningful educational choices.
- The student will apply problem solving and critical thinking techniques.
- The student will apply math, science, reading, and other school subjects in a practical situation.
- The student will develop keyboarding and computer literacy skills.
- The student will develop basic skills in the safe and proper use of tools, machines, materials, processes, and technical concepts.
- The student will think logically and sequentially.
- The student will develop leadership, creative abilities, positive self-concepts, and individual potential in a technological society.
- The student will communicate by making clear and relevant points through the development of mental process skills.
- The student will apply design, imagination, and creative abilities.

INSTRUCTOR'S SECTION

SUGGESTED ACTIVITIES

- Obtain materials to supplement TLA. See Suggested Resources for computer materials to supplement this module.
- Review instructional outline for this TLA. Modify time frames to suit class needs and plan activities for each class period.
- Study the specific objectives to determine those you will cover. Also decide which objectives should be taught to which students.
- Determine the scope and sequence of any objectives you add to the TLA. Design and develop support materials, including evaluation techniques, for these objectives.
- Determine how you will schedule time for students to demonstrate competence in the required procedures.
- Make arrangements for guest speakers. Supply speakers with specific objectives and other appropriate sections of this TLA.
- If you have access to the internet, search for and bookmark sites dealing with therapeutic care. Practice using search engines such as Yahoo and Alta Vista to find sites to suggest. Have the students, as they finish their activities, search for sites that discuss therapeutic care. Some of the hundreds of possible sites are listed in the resource section.

INSTRUCTOR'S SECTION

PREPARATION

SUGGESTED RESOURCES

This TLA requires that you make available to students four medical references:

- A guide to physical therapy procedures
- A dictionary of medical terminology
- An illustrated guide to anatomy
- A guide to careers in health care / therapeutic care

Due to the nature of medical books, great care must be taken on your part to ensure that the pictures and illustrations in these materials do not violate the community standards in your school district.

Online Sources: Health

http://www.healthfinder.gov/

Online Sources: Professional Organizations

http://www.arttherapy.org/

http://apta.edoc.com/

http://ncata.com/

Online Sources: Vision Impairment

http://seidata.com/~marriage/rblind.html

INSTRUCTOR'S SECTION

WORKSTATION BOOKSHELF

INSTRUCTOR'S REFERENCE MATERIAL

Instructional Sequence	Technology Education: Therapeutic Care		
	Assignments	**Equipment, Tools, and Supplies**	**Facilities Requirements/ Modifications**
Day 1	Take Pretest. Read and study the Assignment Checklist, Words You Should Know, Priority Academic Student Skills, TSA Competitive Events, and Academic and Workplace Skills.	Computer Score Sheet/card or notebook paper for Pretest	
Day 2	Complete Objective 1: Research career opportunities in the field of therapeutic care.	Book on careers in health care, pen and paper, computer with internet connection (optional)	
Day 3	Complete Objective 2: Perform active range of motion exercises.	Pen and paper, blanket	
	Complete Objective 3: Assist a patient to walk with crutches.	Set of crutches, ruler/yardstick, pen and paper	
Day 4	Complete Objective 4: Use professional reference materials to research and report on therapeutic/rehabilitation procedures.	Reference book on therapeutic / rehabilitation procedures, dictionary of medical terms, illustrated guide to anatomy, pen and paper	
Day 5	Complete Objective 5: Explore how the creative arts can be used in therapeutic care.	Art Therapy: chalk, oil pastels, charcoal and art pencils, magazines, scissors, glue, color poster boards, drawing paper, pen and paper Music Therapy: A recording of Bedrich Smetana's "The Moldau" and device for students to listen to recording, earphones/headset, pen and paper	

BEST COPY AVAILABLE

Instructional Sequence	Technology Education: Therapeutic Care		
	Assignments	**Equipment, Tools, and Supplies**	**Facilities Requirements/ Modifications**
		Storytelling: Book of Aesop's Fables, pen and paper	
Day 6	Complete Objective 6: Calculate caloric value in meals; analyze and evaluate daily menus	Calculator (optional)	
Day 7	Complete Objective 7: Research and select a list of resources that a visually impaired student would find useful when making the transition for high school to college	Computer with internet connection	
Day 8	Read and study Impact statements. Complete Career Search Activity. Complete and unfinished assignments. Complete posttest. Complete Skunk Work activities.	Computer Score Sheet/care or notebook paper for Posttest and Spelling Test, paper and pencil	

BEST COPY AVAILABLE

Equipment, Tools, and Supplies: Summary Worksheet

Equipment, Tools,and Supplies	Per Student	Per Period	Total Needed	Special Considerations	Cost Per Student	Cost Per Period	Total Needed	Special Considerations
Computer Score Sheet/card or notebook paper	1							
Computer with internet connection		1						
Paper and pencil	several							
References for Workstation Bookshelf (see page 39)		1 set						
Blanket		1						
Set of crutches		1						
Ruler/yardstick		1						
Calculator (optional)		1						
Creative Art Therapy Supplies:								
Art: chalk, oil pastels, charcoal and art pencils, magazines, scissors, glue, poster boards, drawing paper		1 set						
Music: Recording of "The Moldau" and listening device, earphones/headset		1						
Storytelling: Aesop's Fables		1						

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PRETEST

1. Which of the following is *not* a valid reason for physical therapists to perform range of motion exercises?
   a. They prevent muscles for deteriorating
   b. They stimulate growth
   c. They prevent joints for becoming "locked"
   d. They promote a patient's sense of well-being

2. When immobility is brought on by the condition itself, it is catagorized as a _____ restriction.
   a. prescribed
   b. unavoidable
   c. physical
   d. voluntary

3. Adduction means movement:
   a. away from the midline of the body
   b. toward the midline of the bod

4. When performing the _____ gait, you:
   1. advance both crutches and the weak leg
   2. follow with the strong leg

   a. two-point
   b. three-point
   c. four-point
   d. five-point

5. _____ therapy helps patients work through and understand their feelings and emotions.
   a. Physical
   b. Nutritional
   c. Occuptational
   d. Creative Arts

INSTRUCTOR'S SECTION

PRETEST

6. _____ therapists evaluate a person's self-care and productivity abilities.
   a. Physical
   b. Nutritional
   c. Occuptational
   d. Creative Arts

7. _____ calories a day is about right for most children, teenage girls, active women, and many sedentary men.
   a. 1,400
   b. 1,600
   c. 2,200
   d. 2,800

8. Which one of the following provide a quick source of energy and fuel of the body?
   a. carbohydrates
   b. fats
   c. proteins
   d. vitamins

9. How many calories are there in a gram of fat?
   a. 4
   b. 6
   c. 9
   d. 10

10. A study of college-aged students indicated that _____ were used by a greater percentage of students than any other device.
    a. braille textbooks
    b. enlarging devices
    c. recorded textbooks
    d. computerized readers

INSTRUCTOR'S SECTION

POSTTEST

11. Which of the following is *not* a valid reason for physical therapists to perform range of motion exercises?
    a. They prevent muscles for deteriorating
    b. They stimulate growth
    c. They prevent joints for becoming "locked"
    d. They promote a patient's sense of well-being

12. When immobility is brought on by the condition itself, it is catagorized as a _____ restriction.
    a. prescribed
    b. unavoidable
    c. physical
    d. voluntary

13. Adduction means movement:
    a. away from the midline of the body
    b. toward the midline of the bod

14. When performing the _____ gait, you:
    1. advance both crutches and the weak leg
    2. follow with the strong leg

    a. two-point
    b. three-point
    c. four-point
    d. five-point

15. _____ therapy helps patients work through and understand their feelings and emotions.
    a. Physical
    b. Nutritional
    c. Occuptational
    d. Creative Arts

INSTRUCTOR'S SECTION

BEST COPY AVAILABLE

POSTTEST

16. _____ therapists evaluate a person's self-care and productivity abilities.
    a. Physical
    b. Nutritional
    c. Occuptational
    d. Creative Arts

17. _____ calories a day is about right for most children, teenage girls, active women, and many sedentary men.
    a. 1,400
    b. 1,600
    c. 2,200
    d. 2,800

18. Which one of the following provide a quick source of energy and fuel of the body?
    a. carbohydrates
    b. fats
    c. proteins
    d. vitamins

19. How many calories are there in a gram of fat?
    a. 4
    b. 6
    c. 9
    d. 10

20. A study of college-aged students indicated that _____ were used by a greater percentage of students than any other device.
    a. braille textbooks
    b. enlarging devices
    c. recorded textbooks
    d. computerized readers

INSTRUCTOR'S SECTION

POSTTEST

21. holestic
22. physialogical
23 psychological
24. sensorimotor
25. theraputic

INSTRUCTOR'S SECTION

SPELLING TEST

TEST ANSWERS

1. b
2. b
3. a
4. b
5. d
6. c
7. c
8. a
9. c
10. c

11. b
12. b
13. a
14. b
15. d
16. c
17. c
18. a
19. c
20. c

21. b
22. b
23. a
24. a
25. b

INSTRUCTOR'S SECTION

PRETEST ANSWERS

POSTTEST ANSWERS

SPELLING TEST ANSWERS

EVALUATION SUMMARY

10 POINTS EACH

Pretest _____

15 POINTS EACH

Letter to professional organization (objective 1) _____

Notes from conducting range of motion exercies and walking with crutches (objectives 2 and 3) _____

Report on therapeutic / rehabilitation procedures (objective 4) _____

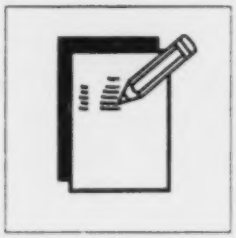
Art therapy work products (objective 5) _____

Calorie calculations and meal analysis (objective 6) _____

Report on vision-impaired students (objective 7) _____

INSTRUCTOR'S SECTION

1. PROCESS EVALUATION



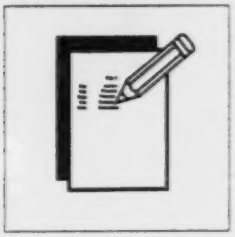
1. PROCESS EVALUATION SCORE _____

EVALUATION SUMMARY

Posttest Score: _____

INSTRUCTOR'S SECTION

2. WRITTEN EVALUATION



2. WRITTEN EVALUATION SCORE _____

EVALUATION WORKSHEET

1. Process evaluation score = _____
2. Written evaluation score = _____
3. Total score = _____

Total Score for TLA =
1+2 = 3

Total Score/2 =Score

TLA SCORE _____

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Zakus, Sharron M., De A. Eggers, and Margaret A. Shea *Mosby's Fundamentals of Medical Assisting, 2nd edition.* St. Louis, MO: The C.V. Mosby Company, 1990.

Online Sources: Health

http://www.healthfinder.gov/

Online Sources: Professional Organizations

http://www.arttherapy.org/

http://apta.edoc.com/

http://ncata.com/

Online Sources: Vision Impairment

http://seidata.com/~marriage/rblind.html

INSTRUCTOR'S SECTION

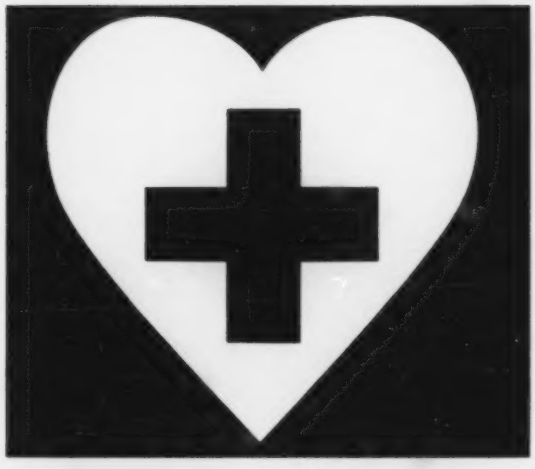
TECHNOLOGY EDUCATION

TECHNOLOGY LEARNING ACTIVITY

TE3209

Therapeutic Care

Suggested Time: 8 Days



Developed by the
Curriculum and Instructional Materials Center
for the Technology Education Division
Oklahoma Department of Vocational and Technical Education

98-012736

TECHNOLOGY EDUCATION THERAPEUTIC CARE

DAY 1 ACTIVITIES

On Day 1 you should complete the following activities:

1. **Complete Pretest**
2. **Read Assignments to Turn In (items to completed in 8 days)**
3. **Read Goal**
4. **Read Words You Should Know**
5. **Read Priority Academic Student Skills**
6. **Read Objectives**
7. **Read Related TSA Competitive Events**
8. **Read Academic and Workplace Applications**

Reading Comprehension
- Gain factual information
- React to written material

Functional Reading
- Follow written instructions
- Use content area vocabulary

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 1 ACTIVITIES

PRETEST INSTRUCTIONS

You will need a computer scan sheet or card to record your answers to the following Pretest. Be sure to write your name, the title of the TLA, the date, and the class period on the computer scan sheet or card using a #2 pencil. Use rows 1-10 to record the answers to the Pretest. If your answers will be hand-scored, use a blank sheet of paper to record your answers and number your answers 1-10.

Get Pretest Questions from your instructor.

When you finish the Pretest, return the test form and the computer scan card or notebook paper to your instructor.

TECHNOLOGY EDUCATION THERAPEUTIC CARE

DAY 1
ACTIVITIES

ASSIGNMENTS TO TURN IN

At the end of 8 days, you should give the following items to your instructor for evaluation:

1. Computer score card/sheet, with answers to:
   a) Pretest
   b) Posttest (including spelling test)
2. Letter to professional organization
3. Report on therapeutic procedure
4. Artwork, music report, and/or fable analysis
5. Sheet of paper with caloric calculations and meal analysis
6. Report on vision impaired students

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 1
ACTIVITIES

GOAL

The Therapeutic Care TLA will help you learn about various approaches to therapeutic care. You will learn how to perform basic range of motion exercises and similar procedures. You will also research careers within this health care field.

TECHNOLOGY EDUCATION THERAPEUTIC CARE

DAY 1
ACTIVITIES

WORDS YOU SHOULD KNOW

biofeedback — process of monitoring a body function, such as pulse, with a mechanical device and altering that function through relaxation or similar techniques

gait — manner of walking

holistic — medical approach of looking at the body as a single system

physiological — pertaining to the study of life processes and functions

physique — the shape and condition of a body

prosthetic — an artificial device, such as an arm or leg

psychological — pertaining to the study of mental behavior

psychosocial — pertaining to the study of social and mental behavior

sensorimotor — combining both movement and the senses

ultrasound — a process using ultrasonic sound to see images inside the body

TECHNOLOGY EDUCATION THERAPEUTIC CARE

- You will know and appreciate the importance of technology and technological literacy.
- You will explore career opportunities so they can make meaningful occupational choices.
- You will apply problem solving and critical thinking techniques.
- You will apply math, science, reading, and other school subjects in a practical situation.
- You will develop basic skills in the safe and proper use of tools, machines, materials, processes, and technical concepts.
- You will think logically and sequentially.
- You will develop leadership, creative abilities, positive self-concepts, and individual potential in a technological society.
- You will communicate by making clear and relevant points through the development of mental process skills.

DAY 1 ACTIVITIES

PRIORITY ACADEMIC STUDENT SKILLS

TECHNOLOGY EDUCATION THERAPEUTIC CARE

DAY 1 ACTIVITIES

OBJECTIVES

At the completion of this Technology Learning Activity, you should be able to:

1. Research career opportunities in the field of therapeutic care.

2. Perform active range of motion exercises.

3. Assist a patient to walk with crutches.

4. Use professional reference materials to research and report on therapeutic/rehabilitation procedures.

5. Explore how the creative arts can be used in therapeutic care.

6. Calculate caloric value in meals; analyze and evaluate daily menus.

7. Research and select a list of resources that a visually impaired student would fin useful when making the transition from high school to college.

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 1 ACTIVITIES

RELATED TSA COMPETITIVE EVENTS

The following TLA Competitive Events apply to your study of *Theraputic Care*.

- Technical Research and Report Writing (Objective 4)

See TSA Competitive Events Guidelines for specific details on the competitions.

TECHNOLOGY EDUCATION THERAPEUTIC CARE

The symbols in the right column are used to identify the Academic and Workplace Applications that are reinforced by specific activities in this TLA.

Reading Skills Applied:

Reading Comprehension
- Gain factual information
- React to written material

Research and Reference
- Find materials in library
- Use standard references

Functional Reading
- Interpret forms and records
- Follow written instructions
- Use contnet area vocabulary

Writing Skills Applied:

Language
- Use standard grammmar, spelling, and capitalization
- State ideas clearly

Composition
- Compose reports

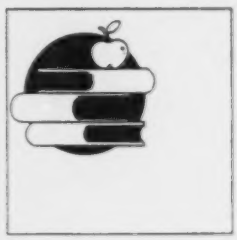
Functional Writing
- Write letters

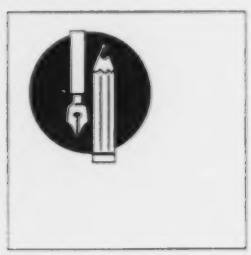
Mathematics:

Operation and Calculation
- Calculate with whole numbers

DAY 1 ACTIVITIES

ACADEMIC AND WORKPLACE APPLICATIONS





TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 1
ACTIVITIES

Interpersonal or Relating:

General Relating
- Analyze/apply nonverbal communication

Creative Thinking/Problem Solving:

Cognative Activities
- Collect/record information
- Identify critical elements/issues
- Analyze/synthesize information
- Draw conclusions

Employability:

Job Search/Selection
- Analyze personal occupational aptitudes/preferences
- Investigate employment prospects of a career field/occupation
- Investigate training requirements for a career field/occupation
- Investigate benefits of a career field/occupation

Job Acquisition/Development
- Master specific job task / procedure

TECHNOLOGY EDUCATION THERAPEUTIC CARE

On Day 2 you should complete the following activities:

1. **Read Information Sheet**

2. **Complete Objective 1**

DAY 2 ACTIVITIES

SUMMARY OF ACTIVITIES

Research and Reference
- Find materials in library

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Functional Writing
- Write letters

Job Search/ Selection
- Analyze personal occupational aptitudes/preferences
- Investigate training requirements for a career field/occupation

TECHNOLOGY EDUCATION THERAPEUTIC CARE

DAY 2
ACTIVITIES

INFORMATION SHEET

There are many different types of professions within the field of therapeutic care. The activities in this course cover four broad areas:

- Physical therapy
- Occupational therapy
- Dietary or nutritional therapy
- Creative arts therapy

The following information will help introduce you to some of the specifics about these areas. After reading this information, you'll have an opportunity to do further research on specific careers in these areas or explore other types of therapeutic care.

PHYSICAL THERAPY

Physical therapists organize, conduct, and administer medically prescribed therapeutic treatment programs. The goals of these treatment programs are to restore body functions and to prevent disability following disease, injury, or loss of a body part.

This includes teaching someone who has broken a bone how to use crutches—which you will do in an upcoming activity—to helping persons born with disabilities reduce pain and expand their physical capabilities.

The tools of physical therapy are far reaching and reflect the broad range of medical science. Therapists in this field

work with sophisticated ultrasound and biofeedback equipment, and with simple "hot" and "cold" packs.

Because physical therapists encounter many different types of patients, and use a variety of equipment, their educational background must also be far reaching. Biology, physics, mathematics, and social science courses are all recommended for those considering this career.

OCCUATIONAL THERAPY

Occupational therapists evaluate a person's self-care and work/productivity abilities. They plan and implement treatments for deficits in sensorimotor, reasoning and psychosocial skills.

It is important to understand that occupation, at least in this instance, does not just refer to a job or work. Although occupational therapists do assist people who have been injured or are disabled in work-related skills, they also help these people meet the challenges of everyday living. For example, later in this course you'll have to develop a plan for a visually impaired high school student who wants to go to college.

Occupational therapists have a slightly less clinical or medical focus as do physical therapists and their educational background often reflects this difference. Occupational therapists have a greater exposure to the liberal arts, such as literature and philosophy.

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 2
ACTIVITIES

DIETARY OR NUTRITIONAL THERAPY

Dietetic care can be considered a field unto itself. Yet we are including it here as part of a holistic approach to therapy. After all, adjustments in diet can make as much difference in both recovery and everyday living as learning how to walk after suffering an injury.

Dietitians work to improve an individual's health by assessing nutritional status and needs and by providing appropriate treatment, including counseling and education. The dietary activity you'll perform in later in this course involves analyzing a breakfast, lunch, and dinner for its nutritional value.

The educational background of persons in this profession reflect both medical and business concerns. Depending upon the specialization selected, a dietitian can have advanced courses in chemistry and/or food service systems management.

CREATIVE ARTS THERAPY

"Creative arts therapy" is a catch-all phase used to describe a whole range of artistic approaches. Often people are surprised to discover that the creative arts are used as therapy. But as anyone who has a favorite song, movie, or poem can tell you, the creative arts both inspire people and expand their horizons.

The activities from which you can choose in this section involve creating artwork, interpreting music, and analyzing stories. Other types of creative arts therapy include

dance and movement, recreation and play therapy, puppetry and mask making.

While artistic expression is often the result of inspiration, it also requires scholastic discipline. Persons involved in creative art therapies not only need to study their selected art form, but also have a background in health care, psychology, and physiology.

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 2
ACTIVITIES

OBJECTIVE 1

Research career opportunities in the field of therapeutic care.

INTRODUCTION

As you've read, the activities you'll be performing over the next few days reflect a wide range of therapeutic practices and disciplines. Yet there are many other specialties and sub-specialties, such as radiation therapy, that we won't have an opportunity to address. So here's your chance to get a glimpse of all types of therapeutic care.

TOOLS AND MATERIALS

- Book on careers in health care
- School library
- Computer with internet connection and access to the world wide web (optional)
- Pen and paper

PROCEDURE

Your instructor should have a book that discusses different occupations in the health care field, including many therapeutic professions. Other resources may also be available from your instructor or at the school's library. Gather these materials together and find a quiet place to study.

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 2
ACTIVITIES

Researching Career Opportunities

Begin this activity by reviewing what the career book provided by your instructor, or other resources in the library, has to say about these fields we've already touched on:

- Physical therapy
- Occupational therapy
- Dietary or nutritional therapy
- Creative arts therapy

Then look at other careers in therapeutic care. Once you have found a field that interests you, complete the following steps.

STEP 1: Write down the official title or position that interests you. Explain the duties and responsibilities of someone in this career and why you find it interesting.

STEP 2: Research the educational requirements of this position. They may be listed in the book provided by your instructor or available in reference materials in the school library. Make a note of what these requirements are and what classes you believe someone in high school should take to help prepare for or fulfill these requirements.

If you have access to the internet's world wide web, you should be able to research programs offered by vocational institutes and colleges in your selected profession. This information may be helpful in planning.

STEP 3: Planning for the educational requirements of a chosen profession is an important step in building a career. Yet you also need to include research on current issues and opportunities within profession itself.

One of the best ways to achieve those goals is through contact with organizations and associations. For nearly every field there is at least one, if not more, professional associations. Creative art therapists, for example, can contact:

NCATA
National Coalition of Arts
Therapies Association
2000 Century Plaza, Ste. 108
Columbia, MD 21044

There are also other organizations for specific forms of creative art therapy, such as music or dance therapy.

Using the reference materials provided by your instructor, as well as those in the school library,

find an association that deals with your selected profession. Then write a brief letter describing your interest in the field and request that they send you information on both the profession itself and their organization.

If possible, use a computer and word processing program to make your letter look professional.

STEP 4: When you have finished, review your findings with your instructor. Be sure to discuss the educational requirements of the profession and what classes a high school student would need to take to meet those requirements.

Also have your instructor review your letter and make any changes that are suggested. Then make a copy of the letter for you to keep and mail the original. When you receive a reply, share it with your classmates and instructor.

TECHNOLOGY EDUCATION THERAPEUTIC CARE

On Day 3 you should complete the following activities:

1. **Read Information Sheet**
2. **Complete Objective 2**
3. **Read Information Sheet**
4. **Complete Objective 3**

DAY 3 ACTIVITIES

SUMMARY OF ACTIVITIES

Reading Comprehension

- Gain factural information

Job Acquisition/Development

- Master specific job task / procedure

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TECHNOLOGY EDUCATION THERAPEUTIC CARE

DAY 3
ACTIVITIES

INFORMATION SHEET

The general goal of physical therapy is to restore and maintain a patient's mobility and ability to function.

A wide range of tools are available to the physical therapist, including:

- Electronic devices that stimulate muscle groups
- Prosthetic devices that replace missing arms or legs
- The application of heat and cold to injured areas
- Exercises to strengthen and maintain agility
- Use of devices to aid in mobility

The activities you'll be performing today focus on those last two items: exercises and use of devices. However all of the items noted above represent just of few of the different approaches to physical therapy. If you have time after concluding today's activities, you can research other methods.

Let's begin by looking at the most basic type of exercises that a physical therapist might perform with a patient. They are called "range of motion exercises." These exercises are performed for a variety of reasons:

- They help prevent muscles from deteriorating, a condition formally called muscle atrophy.

- They help prevent joints from becoming "locked" into a certain position, a condition formally called contracture formation.

NOTE: *When muscles and joints are not used or moved, it is possible for the veins in these areas to form "pools" of blood. This is called venous stasis.*

Aside from these physical considerations, there is also an important emotional reason for the therapist to perform passive range of motion exercises on a patient. These exercises can promote a patient's sense of well-being and independence.

The exercises you'll be performing today will probably seem very simple. In fact, you may think they offer little benefit. The truth is, however, that any exercise, no matter how slight, helps to preserve body function.

Our normal activities of walking, sitting, changing positions in a chair or bed, even though they may seem insignificant, actually play a major role in our physical well-being. Those who engage in more vigorous exercise such as jogging, aerobic work-outs, swimming, or other similar activities are maximizing the body's benefits.

Exercise also increases the body's blood flow. This helps all of the body's systems to work more efficiently and promotes better exchange of nutrients and waste products.

There are very real physiological and psychological benefits to exercise. And the maintenance of normal movement, such as that promoted by range of motion exercises, helps to maintain optimum health.

Now although the exercises themselves are simple, you may find some of the terminology associated with these movements to be complex. These terms are listed below. Study them carefully and see how they match up with the illustrations that follow. Then you'll be ready to perform some basic range of motion exercises.

- Abduction — Movement away from the midline (middle) of the body
- Adduction — Movement toward the midline of the body
- Deviation — Movement at the wrist toward the thumb and little finger; a type of abduction and adduction
- Dorsal flexion — Bending the wrist or ankle toward the elbow or knee
- Eversion — Movement at the ankle with the sole of the foot turning outward

DAY 3 ACTIVITIES

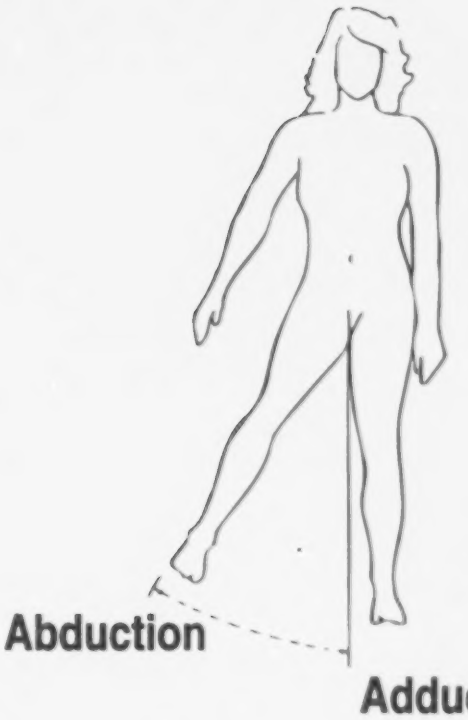
- Extension — Straightening of a joint
- External rotation — Turning of a joint away from the body
- Flexion — Bending a joint
- Hyperextension — Movement of a joint beyond the point of extension
- Internal rotation — Turning of a joint toward the body
- Inversion — Movement at the ankle with the sole of the foot turning inward
- Opposition — The capacity of the thumb to touch each finger
- Palmar flexion — Bending at the wrist, placing the palm downward
- Plantar flexion — Bending at the ankle, placing the sole downward
- Pronation — Turning the palm downward
- Rotation — Turning of a joint
- Supination — Turning the palm upward

Internal Rotation

Turn/Roll Toward Midline

External Rotation

Turn/Roll Away from Midline



Abduction

Move Away from Midline

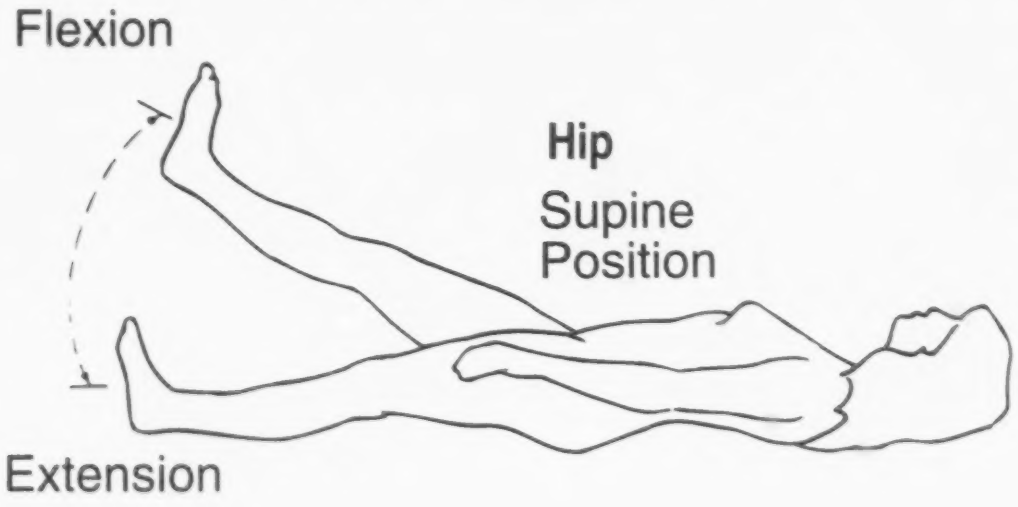
Adduction

Move Toward Midline

Range of Motion General Terms

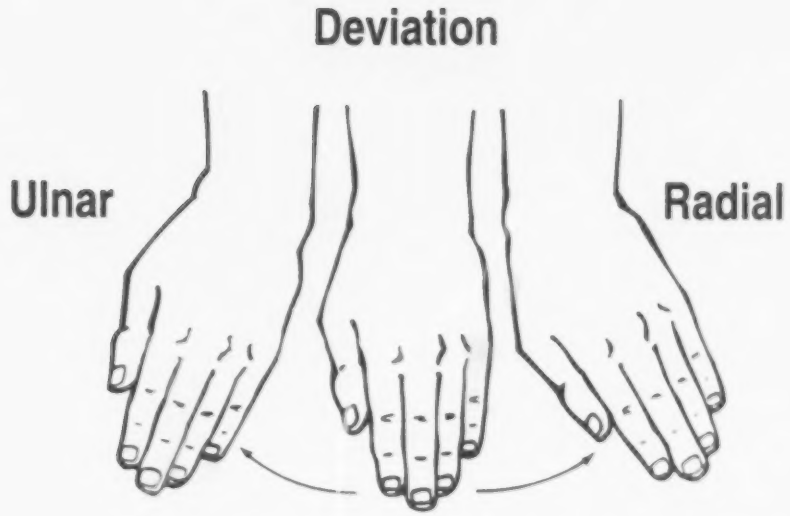
Flexion/Extension

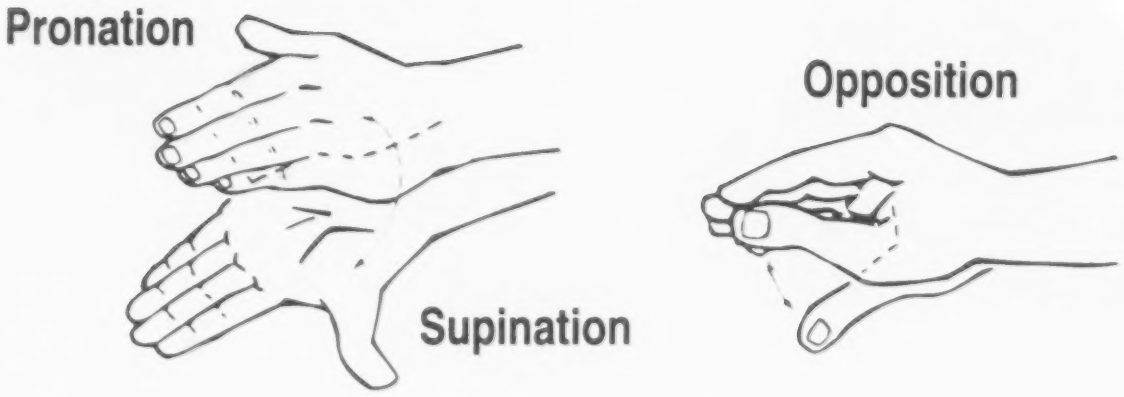
(Bending/Straightening)



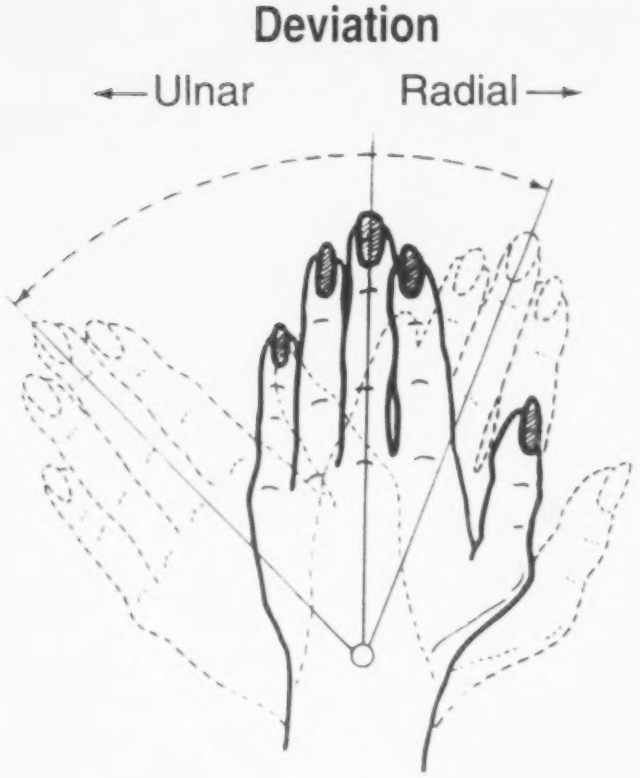
Normal Range of Motion
Specific Terms

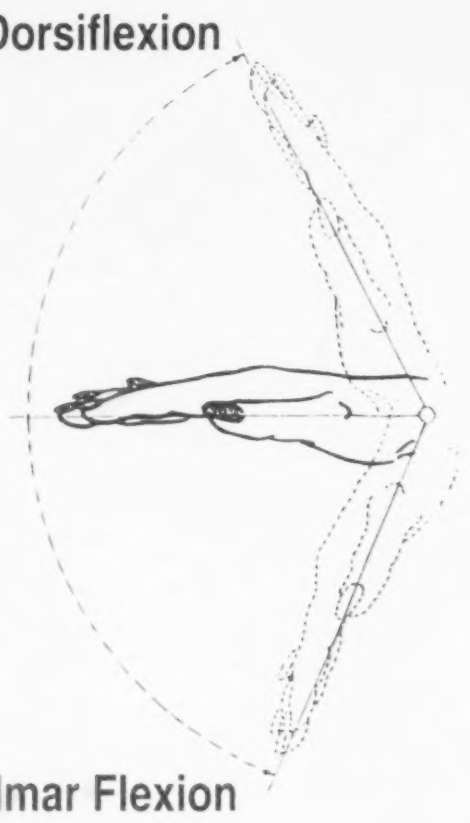
Upper Extremities





Normal Range of Motion Wrist





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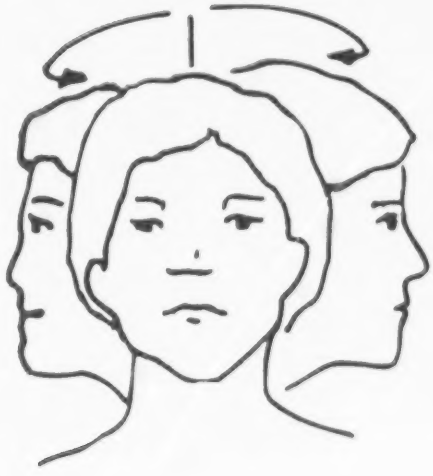
Normal Range of Motion

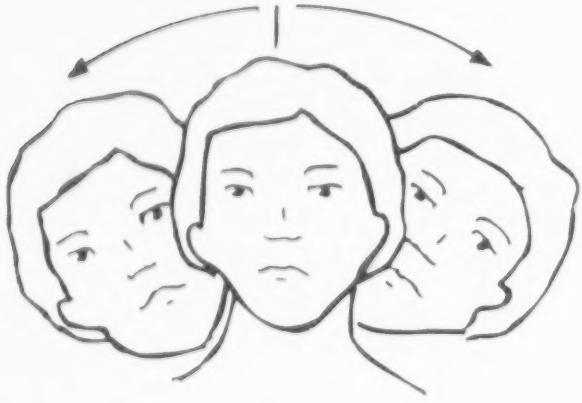
Cervical

Flexion Extension

Rotation



Lateral Flexion

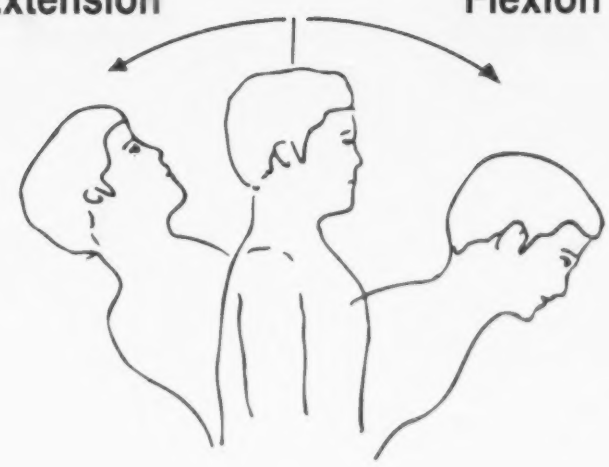


Normal Range of Motion

Thoracic and Lumbar

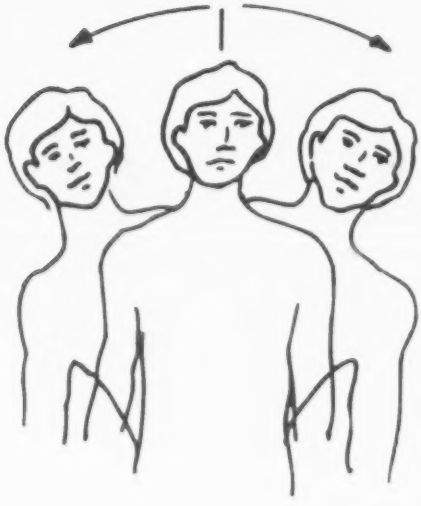
Extension

Flexion



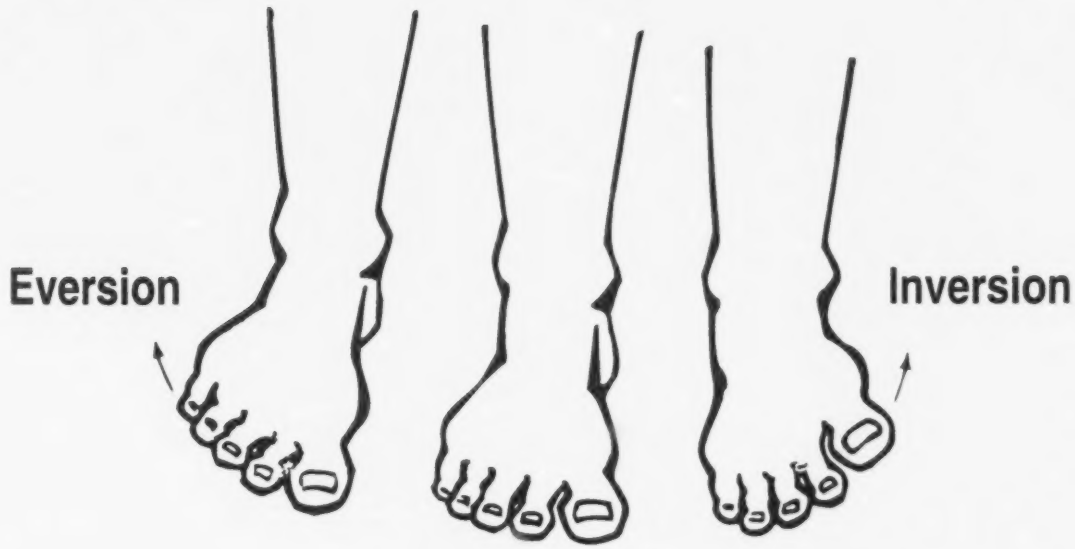
Rotation

Lateral Flexion



Normal Range of Motion
Specific Terms

Lower Extremities



TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 3
ACTIVITIES

OBJECTIVE 2

Perform active range of motion exercises.

INTRODUCTION

Range of motion exercises help maintain muscle and joint function and also stimulate circulation. These exercises may be active or passive.

In active range of motion exercises, the type you'll be performing today, the physical therapist encourages patients to extend their joints through all possible movements. As the patient performs these exercises, the therapist notes any difficulty experienced by the patient. In passive range of motion exercises, the therapist actually moves the patients' joints since they are unable to do so on their own.

TOOLS AND MATERIALS

- Pen and paper to record notes
- Blanket

PROCEDURE

Gather together all of the necessary supplies and equipment. If you are working with a partner, you can observe/assist each other in performing these exercises. If you do not have a partner, ask if your instructor can request another student to help you.

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 3
ACTIVITIES

CAUTION: The following exercises cover the range of motion for the neck, shoulder, elbow, forearm, wrist, fingers, hip, knee, ankle, and foot. Any student that has an injury or medical history of injury to these areas should skip the exercise for that area.

STEP 1: Explain the procedure to the patient, including benefits of active movement. Caution the patient not to push beyond resistance.

STEP 2: As each exercise is performed:

a. Ask the patient to identify the terminology associated with that particular movement (flexion, deviation, pronation, etc.).

b. Record if the patient can perform each exercise with fullest possible range of motion and does not experience discomfort.

STEP 3: Have the patient perform each movement three times in a row.

Exercising The Neck

STEP 4: Instruct the patient to exercise the neck by:

a. Bending the neck forward until the chin touches the chest and return to starting position (flexion and extension).

b. Turn the head to the left and to the right (rotation).

Exercising The Shoulder

STEP 5: Instruct the patient to exercise the left shoulder by:

a. Lifting the left arm forward, over the head and returning it to the side (flexion and extension).

b. Lifting the left arm up and out to the side and returning it to the side (abduction and adduction).

c. Flexing the left elbow and bringing it to the shoulder level, then touching the back of the neck with the fingers (external rotation).

d. Flexing the left elbow and reaching across the chest to touch right shoulder (internal rotation).

e. Repeat exercise using right shoulder.

Exercising The Elbow And Forearm

STEP 6: Instruct the patient to exercise the left elbow and forearm by:

a. Bending the left elbow to touch the shoulder with fingers and straightening (flexion and extension).

b. Extending the left arm and turning the palm upward and downward (pronation and supination).

c. Repeat exercise using right elbow and forearm.

Exercising The Wrist

STEP 7: Instruct the patient to exercise the left wrist by:

a. Bending palm side of the left hand down toward the arm and back pulling fingers toward shoulder (palmar flexion and dorsal flexion).

b. Move left hand from side to side toward thumb and then toward little finger (deviation).

c. Repeat exercise using right wrist.

Exercising The Fingers

STEP 8: Instruct the patient to exercise the left fingers by:

a. Making a fist with the left hand and then straightening the fingers (flexion and extension).

b. Spreading left fingers like a fan and bringing fingers back together (abduction and adduction).

c. Touching left thumb to each left finger (opposition).

d. Repeat exercise using right hand and fingers.

Exercising The Hip And Knee

STEP 9: Instruct the patient to exercise the hip and knee by:

a. Spreading the blanket on the ground and laying face-up (supine position).

b. Bending the left knee and bringing it as close to the chest as possible, then returning it to starting position (flexion and extension).

c. Moving the left leg out to the side and returning it (abduction and adduction).

d. Repeat exercise using right leg.

e. Turning both legs inward so toes of both legs touch and then turn both legs outward (internal and external rotation).

Exercising The Ankle And Foot

STEP 10: Instruct the patient to exercise the ankle and foot by:

a. Bending the left foot upward toward the leg and downward away from the leg (dorsal flexion and plantar flexion).

b. Roll the left foot toward big toe side and back toward little toe side (inversion and eversion).

c. Repeat exercise using right foot.

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 3
ACTIVITIES

INFORMATION SHEET

By the very nature of their duties, physical therapists will often have many patients who have limited mobility.

They may see temporary immobility, for example, in a patient recovering from surgery. Temporary immobility of a longer duration could result from a fractured leg and the cast required for healing. Permanent immobility could result from paralysis after an accident severing the spinal cord.

There are also varying degrees of mobility. The patient with a fractured leg has only one limb completely immobile. The paralyzed patient could have all arms and legs immobile, or only the legs or arms.

The causes of immobility can be divided into three categories:

- Therapeutic restrictions — Those imposed for healing to take place
- Unavoidable restrictions — Those brought about by the condition itself
- Voluntary restrictions — Those in which that patient chooses not to move.

The next activity involves working with someone who has temporary immobility for therapeutic reasons.

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 3
ACTIVITIES

Assist a patient to walk with crutches

OBJECTIVE 3

INTRODUCTION

Many patients have difficulty walking—or ambulating as it is referred to in medical environments—without help. But these patients can be ambulatory with some device to assist. In most health care settings, the physical therapist will have the primary responsibility in teaching patients to use these aids such as wheelchairs, walkers, and crutches.

TOOLS AND MATERIALS

- A set of crutches
- Ruler, yardstick, or similar measuring device

PROCEDURE

Gather all of the necessary equipment and supplies. If you are working with a partner, you can assist each other in using the crutches. If you do not have a partner, ask if your instructor can request another student to help you.

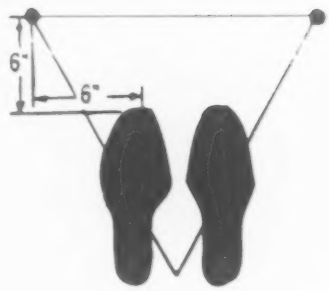
STEP 1: Mark out an uncluttered area that is at least 10-12 feet long to practice walking with crutches.

STEP 2: Check to see that the crutches are in good repair with hand grips and rubber caps on all tips.

STEP 3: When the patient is using the crutches:

a. There should be "two fingers" of space between the top of the crutches and the patient's armpits (axillary area).

b. The crutches should extend six inches to the side and in front of the foot. This is called the tripod position.



c. The arms should be bent at a 20-30 degree angle. Adjust the crutches as necessary so they properly fit the patient.

This activity involves practicing three different gaits, or manners of walking, when using crutches. Have the patient practice each gait at least two or three times. As the patient practices each style, be sure to note if the proper foot movement is followed.

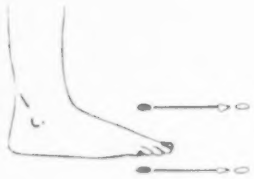
TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 3
ACTIVITIES

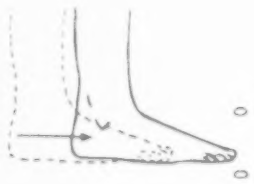
The Three-point Gait

NOTE: *This can be used when the patient's weak leg should not bear weight.*

STEP 4: **Advance both crutches and the weak leg.**

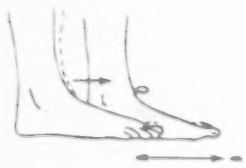


STEP 5: **Follow with the strong leg.**

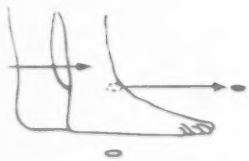


The Two-point Gait

STEP 6: Advance left crutch and right leg.



STEP 7: **Then advance right crutch and left leg.**



TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 3
ACTIVITIES

The Four-point Gait

STEP 8: Advance right crutch.

STEP 9: Advance left foot.

STEP 10: Advance left crutch.

STEP 11: Advance right foot.

If you finish day three with time left over, practice matching terms associated with physical therapy to the appropriate movements. Or ask your instructor if you can use the internet or other resources to research different types of physical therapy. If your school's internet connection is unavailable, your instructor should have a professional resource on therapeutic procedures that you can review. In fact, it might be helpful to start looking at that book now since you'll be using it quite a bit during tomorrow's activity. At the end of the period, be sure the crutches and other equipment are properly stored.

TECHNOLOGY EDUCATION THERAPEUTIC CARE

On Day 4 you should complete the following activities:

1. Complete Objective 4

DAY 4 ACTIVITIES

SUMMARY OF ACTIVITIES

Reading Comprehension

- Gain factural information

Research and Reference

- Use standard references

Language

- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition

- Compose reports

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 4
ACTIVITIES

OBJECTIVE 4

Use professional reference materials to research and report on therapeutic/rehabilitation procedures.

INTRODUCTION

Yesterday's activities covered the most basic types of physical therapy: range of motion exercises and walking with crutches. Now you will research and learn about more advanced procedures.

For every specialty in health care there are a variety of tools and resources. Yet common to all specialities are reference books and materials. Today your instructor will provide you with a professional reference book that covers specific physical therapeutic procedures.

This book can be found in college classes and in medical offices. The language in it is complex and at times will no doubt seem foreign. That's why you'll also be given a medical dictionary and illustrated guide to anatomy.

You are not expected to understand everything you read in these books. Yet with some concentration and effort, you will be able to glean enough information to complete this activity.

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 4
ACTIVITIES

The purpose of introducing you to these materials is not to confuse you, but rather to open your eyes. If you are at all interested in a career in health care, then pay close attention and start to think about what type of classes you need to take in the next few years to help prepare you for this field.

And just in case you're concerned that this entire course will be spend on detailed anatomy and physical procedures, don't worry. Tomorrow we'll explore the other side of the coin: how the creative arts are used in therapeutic care!

TOOLS AND MATERIALS

- Reference book on therapeutic/rehabilitation procedures
- Dictionary of medical terms
- Illustrated guide to anatomy
- Pen and paper

PROCEDURE

Gather together all of the reference materials and find a quiet place where you will be able to read and write. Because this material is complex, you might want to review the different assignments you're expected to complete and budget your time accordingly.

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 4
ACTIVITIES

Learning How To Use Reference Materials

The reference book on therapeutic/rehabilitation procedures you have been provided with should be divided into sections on different types of illnesses/injures and related procedures. Check the table of contents and also thumb through the book to see how it is arranged.

Within each of these sections there should be several subheadings. Typically the subheadings include:

- **Definition**
- **Anatomy that is affected**
- **Epidemiology (what portion of the population — young, old, males, females — are most likely to be affected)**
- **How the disease is assessed or detected and evaluated**
- **What types of treatment or therapy can be used**

- What is the typical or expected outcome of treatment and therapy

Each section may not contain every subheading. For some there may be more, for others there may be less. This depends on both the procedure and the publisher.

STEP 1: Once you have a basic understanding of how your book is arranged, provide a brief written answer to one of the following:

- If the book is divided into both therapeutic procedures and body systems, research and describe one way to treat burns and one therapeutic procedure for the neuromuscular system.

- If the book is only divided into procedures, research and briefly describe different approaches for people who have cancer (pain management, nutritional therapy, social support, etc.).

- If the book is only divided into body systems, research and briefly describe different therapeutic procedures for cardiovascular system.

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 4
ACTIVITIES

Now, using either the table of contents or index, find the area in your reference book that covers osteoporosis. Once you have found this section, write a brief response to each of the following questions.

Note: *If you have trouble understanding some of the terminology in the reference book, see if the terms are explained in the medical dictionary or pictured in the illustrated guide to anatomy.*

STEP 2: **What is osteoporosis?**

STEP 3: **Who is typically affected by osteoporosis?**

STEP 4: **What type of drug therapy is available, if any?**

STEP 5: **What type of rehabilitative therapy is available, if any?**

Reporting On A Therapeutic Procedure

Now you have an opportunity to research and report on a therapeutic procedure of your own choice. You might find different therapeutic approaches to pain management interesting, or having just worked with crutches, you may want to look at therapeutic approaches to persons with arthritis or who have had an

amputation.

No matter what area you select, you are asked to describe in your own words:

STEP 6: Describe the illness/affliction the therapeutic procedure is designed to treat. (One paragraph)

STEP 7: What the therapeutic procedure involves and it's purpose. (Two paragraphs)

STEP 8: What complications may arise from the therapeutic procedure or progression of illness/affliction, if applicable. (One paragraph)

STEP 9: What is the likely outcome of therapeutic procedure and what type of follow-up is needed? (One to two paragraphs)

If you finish day four with time left over, then use the reference materials to read up on procedures that you find interesting. If you run out of time before completing this assignment, then save what you have written and complete this assignment after taking the posttest.

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

On Day 5 you should complete the following activities:

1. **Read Information Sheet**

2. **Complete Objective 5**

DAY 5 ACTIVITIES

SUMMARY OF ACTIVITIES

Reading Comprehension

- React to written material

Language

- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition

- Compose essays

General Relating

- Analyze/apply nonverbal communication

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 5
ACTIVITIES

INFORMATION SHEET

To state the obvious, therapeutic care deals with healing and rehabilitating the body. Yet it is all too common to mistake the body as a collection of parts or systems.

While the immediate focus in medical emergencies is to fix the physiological problem, one must not overlook the emotional and psychological needs of a patient. The mind and the body function together. And both need equal attention.

You have probably heard the old saying that, "Music soothes the savage beast." In essence what this implies is that music has an affect on a person. No one really doubts this to be true. The question is, how much of an affect and what role should that play in therapeutic care.

The role of creative arts in therapy does not receive as much attention in the general press as does medical therapeutic approaches. That's why it is often misunderstood and viewed with a skeptical eye by some. A well-balanced perspective of what role the arts should have in health care can be found in the book *Using The Creative Arts In Therapy*, edited by Bernie Warren. Here's how he sums it up:

'Creative therapy' (is) the use of the arts (art, music, dance, drama, puppetry, storytelling and so on) and other creative processes to promote health and encourage healing. Implied in this working definition is the use of artistic and creative activities to help individuals accommodate to a specific disability; or recover from a specific medical or surgical procedure; or

simply improve the quality of an individual's life.

Think back in your own life. Have you ever heard a piece of music that really made you feel happy or sad? Have you ever read a book or story that changed your perspective on a subject or made you understand how someone else felt? If so, aren't these changes just as "real" or "valid" as the way a dose of medicine may cause your body temperature to lower?

That thought is something to keep in mind as we briefly look at the way some of the creative arts can be used in therapeutic care. Then you'll have an opportunity to see how creative you can be.

Creative Arts As Therapy

The creative arts can be used as a means of physical exercise, training, and restoration. For instance, the range of motion exercises you performed earlier are not unlike what a dancer may do to warm-up before performing. Using an art form such a dance can help people who are disabled or recovering from injuries and accidents to restore physical movement.

Making music is another example; playing instruments is a way to restore physical agility. And when you consider the different aspects of music—such as rhythm and melody—these activities can also be viewed as a way to restore/enhance coordination and control.
Giving patients an opportunity to make

different types of artwork—like paintings, sculpture, or even craftworks—is yet another way to extend a person's physical capabilities. And by keeping them focused on the creative process, you may find that patients are willing to push themselves further than they would under "standard" physical therapies.

In a broad perspective, the creative arts may also be viewed as a means of occupational therapy. Think back to the example of making music. As part of a small group activity, this can be an exercise that teaches cooperation and team building. And such skills are important across all occupations.

Creative Arts As Self-Expression

Emotional and psychological healing is just as important as physical healing. And the creative arts offer a tremendous opportunity to assist in those areas.

Sometimes it is hard to express emotions. This may be because a person represses these feelings or it may be due to a physical disability. No matter what the cause, however, creating a painting or drawing can be a means to express those thoughts. After all, you've certainly heard the expression that "a picture is worth a thousands words," haven't you?

Psychologists, art therapists, and other health care professionals use the creative process to help clients work through and understand their feelings and emotions.

Such exercises can offer valuable insight on a person and help us understand each other.

Performing in a play or storytelling are other mediums that allow persons to express their thoughts, feelings, and emotions. And such art forms not only have an impact on the performers, but also work to inspire and exalt the audience.

Explore how the creative arts can be

used in therapeutic care.

OBJECTIVE 5

INTRODUCTION

The activity or activities you'll be doing today are similar to those conducted by creative art therapists. There are, however, a few differences.

Many creative art therapies are done in a group environment with a leader instructing or guiding the group. Today, depending upon which activity you select, you'll either be working with a partner or on your own. This will not take away from, or invalidate, the activity you'll be doing. Just be aware that in a small group environment—and when lead by someone with extensive training in this field—your result might be different from that which you'll produce today. And certainly if done in a group setting, you'd see many other interesting and equally valid responses!

Another thing to keep in mind is interpreting the results of creative art therapy is quite different from calculating the nutritional content of meal (something you'll be doing tomorrow). Checking the answers to mathematical problems is straightforward and objective; 2 plus 2 equals 4, not 73. Yet how one responds to a piece of music, or how one represents an emotion through drawing is very subjective. Just remember that creative therapy does not produce right or wrong answers. Instead it helps people grow and learn more about each other.

There are three different activities from

which you can choose:

- Art therapy - Here you'll first work on your own, and then with a partner, to make drawings that represent different topics.

- Music therapy - In this activity, you'll first listen to a piece of music that was composed with very specific imagery in mind. You'll be asked to develop your own story or imagery to go with that music.

- Storytelling - Fables, parables, and other forms of storytelling can have a profound affect on the reader or listener. In this activity, you'll be asked to find some stories and report on how they could be used to inspire and/or teach.

If you finish one activity before the period is over, then continue on with another. If there isn't enough time to complete that one, you can return to complete after taking the posttest at the conclusion of this course.

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 5 ACTIVITIES

Art Therapy

TOOLS AND MATERIALS

- Image tools
  - chalk and oil pastels
  - charcoal and art pencils
  - magazines, scissors, and glue
- Canvas
  - Color poster boards
  - Drawing paper
- Pen and paper

PROCEDURE

Gather all of the necessary equipment and supplies. If you are not working with a partner, ask if your instructor can request another student to help you.

In this activity, you and your partner will first work separately to create your own images and then together to creative a co-operative piece.

STEP 1: After gathering all of the materials and finding a suitable place to work, both you and your partner select one of the following topics:

- Happiness
- The Future
- Success

- Fear
- Luxury
- Grumpiness
- Beauty
- Loneliness
- Rhythm

STEP 2: Next, working separately and without letting each other see what you are doing, create a picture that represents that topic. You can use the colored chalk, pencils and other tools to draw, cut and paste images out of the magazines to create new images, or both.

3. When both of you are done, review each other's work. Then answer the following questions on a sheet of paper.

- In what ways are they alike?
- In what ways are they different?
- What did you learn about your partner from his or her drawing?

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 5
ACTIVITIES

STEP 4: Now, keeping the same topic you've selected, work together to create a new drawing. Try to do so without speaking to each other or repeating images and objects that either one of you used before. Just take turns working on the canvas and add to/build on the new images the other person creates. Be sure each one of you have equal time to work on the canvas.

When you are done, answer the following questions on your sheet of paper:

- Given that all three drawings represent the same topic, how does the cooperative picture you've just completed differ from the other two pictures?

- Looking at all three pictures, what new perspectives do you have about the topic you've selected?

- How would you use this technique for therapeutic care? (How could this activity, or one like it, help those who have physical injuries? How could it help people who have had a traumatic experience?)

TECHNOLOGY EDUCATION THERAPEUTIC CARE

DAY 5 ACTIVITIES

Music Therapy

TOOLS AND MATERIALS

- A recording of Bedrich Smetana's "The Moldau"
- Portable cassette or cd player
- Earphones/headset
- Paper and pencil

PROCEDURE

Find a quiet place where you can listen to this piece of music. It was composed in the late 1800's and is a "symphonic poem." That means the composer, Bedrich Smetana, had very specific imagery in mind when writing this piece. Exactly what he pictured, at least at this point in the activity, is not important. Just be aware that listening to this music should evoke some visual image in your mind's eye.

STEP 1: Listen to this entire piece with your eyes closed. As you begin, you might want to think of this as a soundtrack to a mini-movie; if so, what story does it tell? Or you could just listen to the music and see if it brings to mind any memories or feelings.

When you are done, describe the imagery you developed on a sheet of notebook paper. If you want to, you can replay the piece as you write.

STEP 2: Next, try to describe at least three different therapeutic applications for this piece of music. For

example, if someone was afraid of going to the dentist, would this be a good piece to listen to as the dentist fills a cavity? Describe your applications on your sheet of paper.

STEP 3: Finally, if there is enough time left, go to the school's library and try to find out what imagery the composer had in mind when writing this piece. On your sheet of paper, report your findings in and explain how well you think the composer did in conveying this imagery.

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 5
ACTIVITIES

Storytelling

- Book of Aesop's Fables
- Pen and paper

Although fables can be short, and those attributed to Aesop are especially so, they can be very powerful, meaningful, and inspirational.

For example, consider the activity a few days ago when you tried to walk with crutches. Although it was probably fairly easy, think how much harder it would be if you had a cast on your leg.....and needed to get up three flights of stairs. No doubt you could make the climb, but it would require much more work, patience, and some ingenuity. Those attributes might also come to mind after reading Aesop's Fable *The Crow and The Pitcher.*

In this activity, you are asked to identify at least three different fables, summarize what message(s) they convey, and how those messages could be used in therapeutic care. Then you'll get a chance to write your own.

STEP 1: **Read three of Aesop's Fables. For each fable, answer the following questions on a sheet of notebook paper.**

- **What was the fable's title?**

- What was the fable's message or moral?

- How could this fable be used in therapeutic care?

STEP 2: Now that you understand the concepts behind fables—and perphas are feeling a little creative—write one of your own. Just take a sheet of notebook paper and give it a go!

Be sure your fable has a message or moral like the those you've just read. And try to think of ways your fable could be used in a theraputic care setting. When you are done, share your fable with another student or your teacher.

TECHNOLOGY EDUCATION THERAPEUTIC CARE

On Day 6 you should complete the following activities:

1. **Read Information Sheet**

2. **Complete Objective 6**

DAY 6 ACTIVITIES

SUMMARY OF ACTIVITIES

Reading Comprehension

- Gain factural information

Functional Reading

- Interpret forms and records

Operation and Calculation

- Calculate with whole numbers

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 6
ACTIVITIES

INFORMATION SHEET

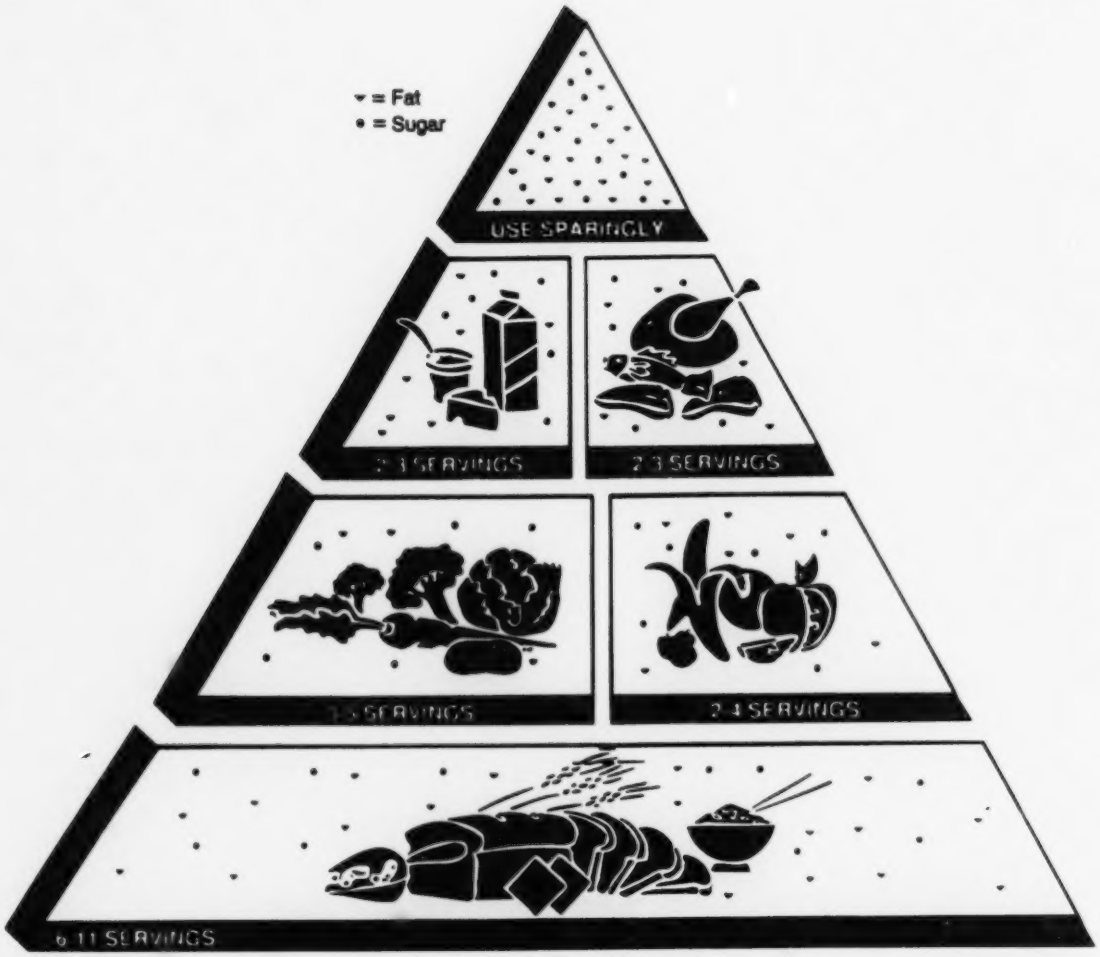
For the past few days we've looked at therapeutic procedures that restore or rehabilitate the anatomy and nurture the spirit. Now it's time to address those that fuel the physique.

Dietitians and nutritionists work with a wide variety of patients to help them learn about and maintain healthy eating habits. But before you learn about the special needs of certain population groups—such as diabetics or athletes in training—you first need to understand the basic requirements of the average person in good health.

One of the best guarantees of an adequate diet for an average person is to include a variety of foods in the meal plan. The Food Guide Pyramid developed by the United States Department of Agriculture is a simple, easily remembered method for choosing these foods. A copy of the pyramid is on the next page.

The pyramid divides all foods into five categories:

- Bread, Cereal, Rice, and Pasta (bottom level)
- Vegetables (second tier, left side)
- Fruit (second tier, right side)
- Milk, Yogurt, and Cheese (third tier, left side)
- Meat, Poultry, and Fish (third tier, right side)
- Fats, Sugars, and Oils (top)


▾ = Fat
• = Sugar
USE SPARINGLY
2-3 SERVINGS
2-3 SERVINGS
3-5 SERVINGS
2-4 SERVINGS
6-11 SERVINGS

The amount of servings for each category are given in ranges—such as 6-11 servings of bread, cereal, rice, and pasta—because different people have different requirements. According to the United States Department of Agriculture:

- 1,600 calories a day is about right for many sedentary women and some older adults

- 2,200 calories is about right for most children, teenage girls, active women, and many sedentary men. Women who are pregnant or breast feeding may need somewhat more.

- 2,800 calories is about right for teenage boys, many active men, and some very active women.

In the activity for this section, you'll learn how to calculate the calories in meals and evaluate them according to the Food Pyramid. But before doing so, you'll also need to understand a different way of looking at nutritional requirements.

Just as food can be broken down into categories in the Food Pyramid, the components within food can also be broken down into categories or substances. The ones we'll examine today are:

- Carbohydrates
- Proteins
- Fats

Carbohydrates

Carbohydrates provide a quick source of energy and fuel for the body. That's because carbohydrates are digested and absorbed into the bloodstream more rapidly than proteins and fats.

Yet proteins and fats are also "energy foods." So why eat carbohydrates in such great amounts—remember the Pyramid recommends 6-11 servings—if proteins and fats also provide energy?

The answer is simple. If you get most of your "fuel" from carbohydrates, then your body can use proteins and fats for other things. (You'll read more about that in just a few minutes.)

There are many sources of carbohydrates in the diet. Principal sources include:

- plant sources
  - grains and grain products

    EXAMPLES: Breads, cereals, pasta (macaroni, spaghetti), rice

- sugar and sugar products

  EXAMPLES: Honey, corn syrup, molasses, candy

- starchy vegetables

  EXAMPLES: Potatoes, peas, beans, corn, sweet potatoes, winter squash, black-eyed peas

- fruits

  EXAMPLES: Bananas, apples, pears

• Animal sources

- milk

Proteins

Proteins have many functions, including being a source of energy or fuel. But if you eat enough carbohydrates, your body can use proteins for other purposes.

For example, proteins help to build and repair body tissues. They also help maintain a normal amount of fluid in the bloodstream, provide resistance to infection, and help blood clot.

Proteins also assist in achieving a normal "acid-base balance" in both cells and in the bloodstream. And they help transport some vitamins, minerals, and fats in the blood to various sites.

There are two types of proteins: complete and incomplete.

- Complete proteins contain eight "amino acids" that cannot be produced by the body and must be supplied by dietary intake. Sources of complete proteins include:

  - meat
  - milk
  - eggs

- Incomplete proteins contain only part of the amino acids that cannot be produced by the human body. Sources of incomplete proteins include:

  - cereals
  - nuts
  - peanuts
  - peas
  - beans

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 6
ACTIVITIES

Fats

Fats are often misunderstood as being "bad." But that isn't true. When eaten in proper amounts, they are good for you and serve some very important functions.

For instance, fats are needed for the transportation and absorption of certain vitamins. They also provide padding to protect vital organs from injury or trauma. And fats act as insulation to help maintain body temperature.

Fats also supply "fatty acids" which are needed by certain cells in the body and assist in the normal growth and maintenance of tissue.

There are two types of fats: saturated and unsaturated.

- Saturated fats are usually, but not always, of animal origin. Those saturated fats that are of animal origin are typically high in cholesterol. (Having too much cholesterol can lead to heart disease.) Sources of saturated fats include:
  - meat fat (animal origin)
  - egg yolks (animal origin)
  - butter (animal origin)
  - ice cream (animal origin)
  - chocolate (plant origin)
  - coconut and coconut oil (plant origin)

- Unsaturated fats are usually, but not always, of plant origin. Eating the right amount and type of unsaturated fats can lower blood cholesterol levels. Sources of unsaturated fats include:
  - corn, sunflower, and soybean oils (plant origin)
  - nuts (plant origin)
  - freshwater fish (animal origin)

Now that you know a little more about dietary requirements and the nutritional value of food, it's time apply this knowledge in an activity that many dietitians and nutritionists perform on a daily basis.

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 6
ACTIVITIES

OBJECTIVE 6

Calculate caloric value in meals; analyze and evaluate daily menus.

INTRODUCTION

A nutritional therapist needs to know how to evaluate the diet of patients. In this activity you will first calculate the amount of calories in different foods and meals. You will then analyze and evaluate the meals according to the recommendations in the Food Guide Pyramid.

TOOLS AND MATERIALS

- Calculator (optional)

PROCEDURE

This example shows you how to calculate the number of calories in food according to grams of carbohydrates, protein, and fat.

First, you need to know the number of calories per gram:

- carbohydrates — 4 calories per gram
- protein — 4 calories per gram
- fat — 9 calories per gram

Then you need to know the grams of carbohydrates, protein, and fat in each food item:

- 1 cup whole milk
  - 12 grams carbohydrate
  - 8 grams protein
  - 8 grams fat

- 2 poached eggs
  - 0 grams carbohydrate
  - 14 grams protein
  - 11 grams fat

To determine the total number of calories, simply multiply according to the number of calories per gram and then add the totals together:

- 1 cup whole milk
  - 12 grams carbohydrate x 4 calories = 48
  - 8 grams protein x 4 calories = 32
  - 8 grams fat x 9 grams = 72

    Total calories 152

- 2 poached eggs
  - 0 grams carbohydrate x 4 calories = 0
  - 14 grams protein x 4 calories = 56
  - 11 grams fat x 9 calories = 99

    Total calories 155

- Total calories for this meal:

  152 + 155 = 307

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 6
ACTIVITIES

On this page and the ones that follow are foods offered with three meals. Also listed are the carbohydrate, protein, and fat content of each food.

STEP 1: Using the information and example on the previous pages as a guide, calculate the caloric value of each food and the total caloric value of each meal.

Breakfast

grapefruit (1)

20 grams carbohydrate
0 grams protein
0 grams fat

Number of calories _____

cornflakes (3/4 cup)

15 grams carbohydrate
2 grams protein
0 grams fat

Number of calories _____

hardboilded egg (1)

0 grams carbohydrate
7 grams protein
5.5 grams fat

Number of calories _____

English muffin (1/2)

15 grams carbohydrate
2 grams protein
0 grams fat

Number of calories _____

skim milk (1 cup)

12 grams carbohydrate
8 grams protein
0 grams fat

Number of calories _____

coffee (1 cup)

0 grams carbohydrate
0 grams protein
0 grams fat

Number of calories _____

table sugar (1 Tbsp)

12 grams carbohydrate
0 grams protein
0 grams fat

Number of calories _____

Total calories for breakfast _____

128

Lunch

tomato juice (1/2 cup)

5 grams carbohydrate
2 grams protein
0 grams fat

Number of calories _____

turkey breast (3 oz.)

0 grams carbohydrate
14 grams protein
6 grams fat

Number of calories _____

whole wheat bread (2 slices)

30 grams carbohydrate
4 grams protein
0 grams fat

Number of calories _____

potato chips (10)

10 grams carbohydrate
1 grams protein
8 grams fat

Number of calories _____

raw peach (1 medium)

10 grams carbohydrate
1 grams protein
8 grams fat

Number of calories _____

mayonnaise (1 tsp)

0 grams carbohydrate
0 grams protein
5 grams fat

Number of calories _____

tea (1 glass)

0 grams carbohydrate
0 grams protein
0 grams fat

Number of calories _____

Total calories for lunch _____

Dinner

corned beef (3 oz.)

0 grams carbohydrate
14 grams protein
11 grams fat

Number of calories _____

cabbage (1 cup)

10 grams carbohydrate
4 grams protein
0 grams fat

Number of calories _____

carrots (1/2 cup)

5 grams carbohydrate
2 grams protein
0 grams fat

Number of calories _____

cornbread (2"x2"x1" slice)

15 grams carbohydrate
2 grams protein
5 grams fat

Number of calories _____

butter (1 tsp)

0 grams carbohydrate
0 grams protein
5 grams fat

Number of calories _____

strawberry ice cream (1 cup)

32 grams carbohydrate
5 grams protein
14 grams fat

Number of calories _____

water (1 glass)

0 grams carbohydrate
0 grams protein
0 grams fat

Number of calories _____

Total calories for dinner _____

STEP 2: Now, using the information in "The Food Guide Pyramid," answer the following questions on a sheet of paper.

1. Considering everything listed for breakfast, lunch, and dinner on the previous pages, does this "menu" meet the guidelines of the Food Pyramid?

2. If this answer above was "no", what would you do to improve the menus?

3. Which meal was the highest in fat?

4. Which meal was the highest in protein?

5. Which meal was the highest in carbohydrate?

When you are done, be sure to review your answers with your instructor. If you finish day six with time left over, correct any errors you made in calculating calories or planning menus. After making your corrections, then use the Food Pyramid as guide to help plan well balanced meals that you can follow this weekend or during school lunches.

TECHNOLOGY EDUCATION THERAPEUTIC CARE

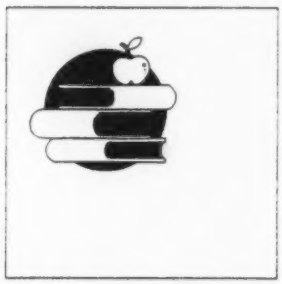
On Day 7 you should complete the following activities:

1. **Read Information Sheet**

2. **Complete Objective 7**

DAY 7 ACTIVITIES

SUMMARY OF ACTIVITIES



Research and Reference
- Select useful resources
- Use computer database

Functional Reading
- Follow written instructions
- Use content area vocabulary

Job Search/Selection
- Analyze personal occupational aptitudes/preferences
- Investigate employment prospects of a career field/occupation
- Investigate training requirements for a career field/occupation
- Investigate benefits of a career field/occupation

Job Acquisition and Development
- Master specific job task / procedure

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 7
ACTIVITIES

INFORMATION SHEET

As mentioned earlier in this course, occupational therapists work with a wide range of persons to help them fulfill their potential. The word occupational does not necessarily apply to a job; in this case it means whatever vocation or function a person is engaged in.

You, for instance, are a student. If you were to loose your sight, an occupational therapist—along with a team of other health care professionals—would work with you to enable you to continue being a student.

But exactly what would that involve? To help give you an idea, read the following excerpt from The Transition to College for Students with Visual Impairments. This research paper explains some of the difficulties experienced by visually impaired high school students as they made the transition to college.

Pay close attention to how the authors have categorized the results of their study. When you are done, you'll be asked to take on the role of an occupational therapist and research/select resources that a blind student would find useful.

literature review, and research results. Interested readers should refer to the complete technical report authored by McBroom, Sikka, and Jones (1993) for more detailed information and explanations.

Results

Student Demographics

There were about the same number of males and females in the survey (54% female and 46% male), however, there was a much greater concentration of white respondents (86%) than nonwhite (14%). The average age of the respondents at the time of the interview was 25 years with a range from 19 to 50 years. Vision loss tended to occur at birth (60% of the respondents) or at a very early age. The majority of students (74%) were healthy and had no additional major health problems.

The students averaged a 3.2 grade point average in high school and in college (4 represented an "A"). Twenty-two percent classified themselves as sophomores or second year junior college students, 33% as juniors, and 45% as seniors. The leading college majors were education, psychology, social work, business, English, communication, sociology, health, and engineering.

Reading Methods Used by Students

In order to keep up with reading assignments, students used taped textbooks (75%); taped class materials (64%); readers (59%); CCTV, Visualtek, or other enlarging devices (38%); braille class materials (17%); large print textbooks (17%); Nemeth coded braille materials (16%); and braille textbooks (8%). Other methods were used by 24% of the students (e.g., computers, color overlays, raised line drawings, and optical character recognition devices). Computers were used on a regular basis for college classwork by 73% of the students.

Student Work History

The majority of students had participated in the work force in some way by the time they were in college. During high school, 88% of the students performed household chores, 55% performed volunteer work, 45% worked for pay during after school hours, and 64% held summer jobs. Twenty-nine percent of the students returned to college after first working awhile and 56% worked for pay while attending college.

Student Extracurricular Activities

Fifty-four percent participated in social groups or organizations, 44% in scholastic or academic organizations, 34% in religious activities, 27% in career or

job-related organizations, 17% in political groups, 15% in athletic groups, and 12% in sororities or fraternities. One-third of the students did not engage in any type of extracurricular activity while in college.

Use of Services and Equipment as Reported by Students

The student respondents were asked a series of questions about whether or not they used services or equipment provided by colleges. A majority of the students used alternative testing arrangements (86%), computers (69%), special preregistration for classes (60%), and college health services (55%). Following these services in decreasing use were tutors (49%), college counseling services (46%), campus O&M instruction (35%), tape recorders or notetakers (34% each), transportation (30%), and college preparatory programs or typewriters (22% each). Services used by twenty percent or fewer students were job placement services (20%), calculators (17%), special housing arrangements (11%), and electronic notetakers (6%).

Help Received from Others

When making any type of major change in their lives, people often turn to others for assistance, support, or advice. The students' families were the most helpful (average = 3.4 with a range from one to four). Sighted friends were also helpful in the transition (average = 2.9), but friends with visual impairments were not as helpful (average = 2.0). College representatives which included people in the office of disabled student services averaged 2.7 in "helpfulness." Less helpful were O&M instructors (average = 2.3), vocational rehabilitation counselors (2.3), rehabilitation professionals including counselors or teachers (2.1), and high school teachers or counselors (1.8).

College Preparation by Students

Students were asked how important a series of items were in their college preparation. Items ranked as "very important" included preregistering for classes (76%), followed by communicating with teachers (69%), ordering textbooks early (63%), applying for financial aid (61%), learning how to manage money or locating transportation (60% each), making housing arrangements (58%), receiving campus O&M instruction (55%), deciding on a college to attend (54%), and communicating with the office of disabled student services (50%). Less than fifty percent of the students ranked the following items as "very important:" (a) finding and scheduling readers or visiting college during orientation (45% each), (b) working with vocational rehabilitation services (44%), (c) meeting or talking with a roommate (30%), (d) attending college preparatory programs (29%), and (e) deciding on a major area of study (27%).

Problems Experienced by Students While Attending College

Students were presented a list of 25 problems and asked if they had experienced any of them while in college. Time management or access to diagrams and charts were the two problems experienced by the greatest percentage of students (54% each). These were followed in descending order by accessing books and written materials (53%), having enough money or difficult classes or assignments (49% each), and transportation (44%). The next group of problems were only separated by one percentage point each: finding ways around campus (39%), participating in recreational or athletic activities (38%), taking exams with time limits (37%), accessing computers (36%), obtaining special services for their disability (35%), and dealing with teachers and professors (34%). The problems experienced by less than a third of the students were social pressures (31%), receiving financial aid (30%), loneliness or finding and scheduling readers (28% each), making good grades or writing papers (27%), making friends (24%), being accepted (23%), getting along with a roommate or registering for classes (22% each), locating suitable housing (21%), living independently (19%), and managing money (12%).

Reading Medium Correlated with Problem Areas

The researchers believed that there might be a relationship between the method of reading and certain problems experienced by students while attending college. Chi-square test statistics showed that students who used readers also had more problems than expected accessing books and written materials, accessing diagrams and charts, and finding and scheduling readers. Both braille textbook readers and Nemeth braille readers had more difficulties than expected accessing books and written materials. Nemeth braille readers also had more problems than expected accessing diagrams and charts. Students who used large print textbooks had no unexpected problems accessing any classroom materials identified in the survey, while students using enlargement devices had fewer problems than expected accessing diagrams and charts. Students who used taped textbooks had more problems than expected accessing books and written materials and accessing diagrams and charts.

College Grades Correlated with Problem Areas

College grade point average was correlated with problem areas. "B" and "C" students had more difficulty than expected with difficult classes or assignments and with making good grades ("A" students had fewer problems than expected for both areas). "A" and "B" students had fewer problems than expected in taking time limited exams, however, "C" students had more problems than expected.

Response to Open-ended Questions

Students were given the chance to answer two open-ended questions: (a) "What do you know now about college that you wish you had known when you were a freshman?" and (b) "What advice would you give a high school student with a visual impairment who wanted to go to college?" Their responses could be summarized into a few general categories. Many students provided a lot of encouragement to anyone contemplating attending college. They offered practical advice for choosing a college and narrowing one's options. Students with visual impairments were encouraged to be assertive, to advocate for themselves, and to become independent and responsible. Students should work closely with teachers, disabled student services, and other agencies to obtain needed equipment and support, including computers, transportation, O&M, and money. Students must learn good study habits and time management and organization skills, as well as test-taking skills. Students were encouraged to cultivate friendships through informal social interactions and organizational activities because the college experience includes life outside the classroom.

Services Provided by Colleges, Now and in the Future

The 66 administrators who responded were asked about 26 services which might be offered by their schools. The only service offered by all colleges was alternative testing arrangements, such as extended time or readers. The other services offered by a large percentage of the colleges were readers (97%); tutors (97%); adaptive course work, such as extended time (96%); adapted computer equipment (94%); and adaptive equipment (89%).

Eighty-three percent of the colleges provided cassette recorders and notetakers to their students with visual impairments; 82%, O&M assistance; 81%, recorded textbooks; 79%, special preregistration; 77%, extra counseling services; 76%, in-service training for professors and staff members; 71%, special orientation; and 70%, club, organization, or support groups. A majority of the colleges provided special housing arrangements (68%), typewriters (67%), diagnostic testing for academic placement purposes (60%), specialized resource rooms (57%), calculators (56%), and peer or assistant counselors (54%). Forty-two percent of the colleges provided transportation to their students with visual impairments, 41% offered large print books; 33%, braille books; 26%, college preparatory programs; and 21%, electronic notetakers.

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TECHNOLOGY EDUCATION THERAPEUTIC CARE

DAY 7 ACTIVITIES

OBJECTIVE 7

Research and select a list of resources that a visually impaired student would find useful when making the transition from high school to college.

INTRODUCTION

You are the occupational therapist for Alice Stevens, age 19. Although she has some sight, Alice is legally blind. She will be leaving her hometown, where she's lived all of her life, to go to college and major in English. Aside from moving to a new city, Alice will be making the transition from living at home with her parents to living on campus in a dorm.

Alice's is a good student who has a strong "B" grade point average; she's received an "A" or two along the way and just a few more "C's". She was involved in her high school's literature club and ran for student body president.

Given what you now know about her, and from what you've read in the research paper, use the internet to research and select resources that Alice would find helpful in making the transition to college life. (You might want to make a list of things Alice would find helpful before you begin your internet search. That way, you won't get lost in the overload of information you're about to uncover. Do not, however, limit yourself to what is on your list; instead, use it as a guide.)

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 7
ACTIVITIES

TOOLS AND MATERIALS

- Computer with internet access to the world wide web

PROCEDURE

Make sure your computer's link to the internet, and web brousing software, is up and running. If you have any questions on how to use this software, ask your instructor to show you.

Using The Internet and Making Selections

STEP 1: The best way to begin is to go to one of the major "search engines" and see what is information on blindness and visual impairments is available. (Conducting a search on the word "blind" will probably produce too many results.)

The following search engines provided many links when this material was printed. Be aware, however, that the internet is constantly growing and changing. Some of these addresses may no longer be valid and/or better search engines have may been developed.

Yahoo!

http://www.yahoo.com/

Alta Vista

http://altavista.digital.com/

Search.com (A large collection of search engines on one web page)

http://www.search.com/

The search engine will produce a wide range of links on blindness and visual impairments. You'll probably find links to:

- Profit and non-profit organizations
- Companies that manufacture aids and equipment for the visually impaired
- "Home pages" developed by individuals that contain information and even more links to blindness and visual impairment information. Examples when this material was printed include:

Welcome To Blind Links

http://seidata.com/~marriage/rblind.html

New Indexes for Vision Impairments Web Pages

http://vanbc.wimsey.com/~jlyon/newind.html

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 7
ACTIVITIES

STEP 2: As you make your way through this information, make a list of what you think would be useful to Alice. Be sure your list contains information that matches those topics mentioned in the research paper.

Example: Time management and the ability to access printed materials were two of the major problems areas reported by visually impaired students. What information on the internet can you find that would help Alice in these areas?

STEP 3: When you find a match, either print out the page or write down the web address and a description of its contents.

STEP 4: Continue the search until you have gathered a well-balanced collection of resources that would help Alice get through all aspects of everyday life on campus.

STEP 5: When you are done, review your findings with your instructor and explain why you selected each.

If you finish the activity with time left over, then continue the search focusing on another disability. Or use the web to find out more about occupational therapy.

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TECHNOLOGY EDUCATION THERAPEUTIC CARE

On Day 8 you should complete the following activities:

1. **Read Impact Statements**
2. **Complete Career Search Activity**
3. **Complete any unfinished assignments**
4. **Complete Posttest**

DAY 8 ACTIVITIES

SUMMARY OF ACTIVITIES

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Job Search/ Selection
- Analyze personal occupational aptitudes/preferences
- Investigate employment prospects of a career field/occupation
- Investigate training requirements for a career field/occupation
- Investigate benefits of a career field/occupation

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TECHNOLOGY EDUCATION THERAPEUTIC CARE

DAY 8 ACTIVITIES

ENVIRONMENTAL IMPACT

Environment is not limited to natural settings. It also applies to man-made surroundings and therapeutic care professionals help patients adapt to both. The occupational therapy activity you performed regarding vision impaired students is a good example. The study that you read detailed the difficulties such students have trying to interact with their environment. And result of your internet search should have shown you ways therapists can assist their patients.

SOCIAL IMPACT

Social factors, such as comfortably interacting with others and issues of self-esteem, are important considerations in therapeutic care. This is especially true for patients who have injuries that have affect their mobility, appearance, or capabilities. In these situations, therapists must pay close attention to their patients social skills and help them feel comfortable and capable.

ECONOMIC IMPACT

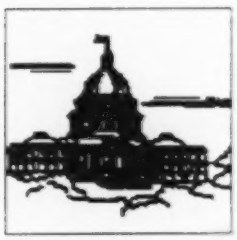
Therapeutic care has a direct ergonomic impact, as you well know after conducting the range of motion exercises and other activities in this course. Therapists work with patients to assist them in restoring their bodies capabilities. And in those instances when patients can not regain their previous abilities, therapeutic care providers will help patients learn how to adapt and develop new ways to perform tasks.

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 8
ACTIVITIES

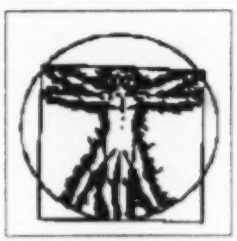
POLITICAL IMPACT

The role and responsibility of government in health care is constantly being redefined. As of this writing, Medicaid allows States to choose the type and extent therapeutic care provided, including physical therapy, occupational therapy and services for individuals with speech, hearing, vision, and language disorders.



ERGONOMIC IMPACT

Therapeutic care has a direct ergonomic impact, as you well know after conducting the range of motion exercises and other activities in this course. Therapists work with patients to assist them in restoring their bodies capabilities. And in those instances when patients can not regain their previous abilities, therapeutic care providers will help patients learn how to adapt and develop new ways to perform tasks.



TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 8
ACTIVITIES

CAREER SEARCH ACTIVITY
INSTRUCTIONS

Using Career Search Abstracts, find the occupations listed below. Select the two occupations that sound most appealing to you.

On a separate sheet of notebook paper, list the two occupations you selected. For each occupation explain what duties you like, which working conditions you think are most important, and what you believe you'll find most satisfying about the job. Remember to use complete sentences, proper grammar, and correct spelling. Give the sheets to your instructor.

- Activities Therapist
- Physical Therapist
- Recreational Therapist
- Respiratory Therapist

RELATED CAREERS

ACTIVITIES THERAPIST

NATURE OF THE OCCUPATION

Activities therapists plan and direct specialized treatment programs to help individuals with physical, mental or social handicaps become as self-reliant and independent as possible.

Duties may include but are not limited to the following:

- Conferring with a patient's physician and a rehabilitation team
- Planning the rehabilitation program and instructing the patient in the performance of specific activities
- Preparing reports describing patient's reactions and symptoms
- Revising activity programs based on an evaluation of patient's progress

OCCUPATIONAL SPECIALTIES

Horticultural Therapists (076.124-018) plan, coordinate and conduct therapeutic gardening programs to facilitate the rehabilitation of physically and mentally handicapped patients. They conduct gardening sessions and revise the programs to conform and grow with the progress of the patients.

Art Therapists (076.127-010) plan and direct activities that help mentally ill and physically disabled patients use art for nonverbal expression and communication.

Music Therapists (076.167-010) plan, organize and direct instrumental and vocal music activities and experiences to help patients within communication, social, daily living or problem solving skills.

Dance Therapists (076.127-018) plan, organize and lead dance and body movement activities to improve patients' mental outlook and physical well-being.

Manual-Arts Therapists (076.124-010) plan and organize woodworking, photography, metalworking, agriculture, electricity and graphic arts activities in collaboration with a rehabilitation team and prepare reports that show development of patient work tolerance, emotional and social development and ability to meet physical and mental demands of employment.

WORKING CONDITIONS

Activities therapists usually work as part of a treatment team along with physicians, nurses, physical therapists and other specialists. In some large facilities, activities therapists in specialty areas may work under the part-time supervision of an activities coordinator. Activities therapists work in a wide variety of settings. However, most work indoors in clean, comfortable, well-ventilated and well-lighted environments.

Activities therapists generally work a 40-hour, 5-day week, although the hours may vary with the employment setting. Attendance and participation in professional conferences and workshops is common in order to enhance their efficiency and knowledge in the field. They may work weekends and/or evenings in some locations.

Tools, equipment and materials used may include:

- Paints and brushes
- Cameras
- Pencils
- Film developing equipment
- Chalk
- Musical and percussion instruments
- Crayons
- Music, recordings and tapes
- Pen and ink
- Gardening tools and supplies
- Canvas, paper, cardboard
- Hand tools
- Clay, molds, wax
- Power tools and rules
- Plastic, plaster
- Pliers, knives, wire, soldering gun

WORKER REQUIREMENTS

You should like:

- Activities involving helping people and having a genuine interest in their welfare
- Activities involving communication of ideas to others
- Activities of an abstract and creative nature

You should be able to:

- Plan, direct or control an activity or the activities of others
- Perform a variety of duties that may change often
- Work effectively with others
- Be persuasive and patient
- Make decisions using personal judgment or measurable standards
- Reason logically
- Communicate well, both orally and in writing
- Work patiently with people in a tactful and considerate manner

Physically you must:

- Reach for, handle and feel objects, for some positions
- Talk and hear
- Be able to see well (naturally or with correction), especially for art therapist positions

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ACTIVITIES THERAPIST

Special requirements:

Some states regulate activities therapists by requiring specified education and experience for registration to practice. Those who meet the requirements can qualify for registration by the professional association representing their area of specialization. Requirements usually entail either a bachelor's or a master's degree in the area of specialization and from 6 months to a year of experience through an internship or actual employment.

Opportunities for experience:

Some experience may be gained through summer, part-time or full-time work as a therapy aide in hospitals, clinics and other places where activities therapists are employed. Also, post-secondary internships may be available.

Methods for entry:

The most common method of entry is through direct application to employers. Assistance in locating job openings may be obtained from college placement offices and professional associations. Openings may also be listed in newspaper want ads and professional journals.

EARNINGS AND ADVANCEMENT

Salaries of activities therapists vary according to the type and size of employer, educational background, work experience, professional registration and region of the country.

Earnings:

Nationally, activities therapists employed by hospitals and similar institutions earned average annual salaries of $31,684 in 1994. In nursing homes, activities therapists earned between $19,342 and $32,237. Therapists employed by hospitals earned slightly less, about $26,176 in 1994.

Federal government activities therapists started at $18,747 or higher depending on their college records. Experienced therapists in supervisory or administrative positions earned up to $33,894 or more a year in 1994.

Oklahoma Salary:

Region	Range
Central	11.00-13.00
Northeast	9.00-13.00
Northwest	--
Southwest	--
Southeast	--

Fringe Benefits:

Depending on the employer, most activities therapists receive paid vacations and holidays, paid sick leave, hospital, life, accident, and disability insurance and pension plans. Some also receive dental and optical insurance.

Career ladder for this occupation may look like this:

- Therapy Department Head
- Therapy Supervisor
- Activities Therapist

EMPLOYMENT AND OUTLOOK

There were over 30,000 recreational therapists employed nationally in 1992. Employment of all therapists is expected to increase faster than the average for all occupations through the year 2005. As rehabilitation programs for disabled people expand and nursing homes and other facilities for the elderly grow, many positions for activities therapists are likely to be created. Job prospects are expected to be good for those with experience and a degree from an accredited institution.

Oklahoma Employment and Outlook

No data available.

Levels of education and training usually needed for this occupation:

- College - bachelor's degree

Levels of education and training also available for this occupation:

- College - master's degree

School subjects helpful in preparing for this occupation:

- College Preparatory
- Arts
- Crafts
- Instrumental and Vocal Music
- Theater and Drama
- English
- Health Education
- Physiology
- Social Studies
- Sociology

MORE SOURCES OF INFORMATION

- American Association Inc. for Music Therapy
  P.O. Box 80012
  Valley Forge, PA 19484

- National Association for Music Therapy
  8455 Colesville Rd., Ste. 930
  Silver Spring, MD 20910

- American Art Therapy Association
  1202 Allanson Rd.
  Mundelein, IL 60060

PHYSICAL THERAPIST

NATURE OF THE OCCUPATION

Physical therapists plan and administer medically prescribed treatment programs for patients to restore function, relieve pain and prevent or limit disability following disease, injury or the loss of a body part. Their patients may include accident or stroke victims and individuals handicapped by such conditions as multiple sclerosis, cerebral palsy, amputation, fractures, arthritis and heart disease.

Duties may include but are not limited to the following:

- Evaluating the physician's referral and the patient's medical records to determine the treatment required
- Performing tests, measurements and evaluations such as range-of-motion and manual-muscle tests, gait and functional analyses and body-parts measurements
- Administering manual therapeutic exercises to improve or maintain muscle function
- Administering treatments involving the application of such agents as light, heat, water and electricity
- Administering deep and surface massage techniques
- Recording patients' treatments, responses and progress

OCCUPATIONAL SPECIALTIES

Physical therapists may choose to become certified as clinical specialists through the certification program of the American Board of Physical Therapy Specialties. The Board currently recognizes seven specialty areas: cardiopulmonary, clinical electrophysiology, geriatrics, neurology, orthopaedics, pediatrics, and sports physical therapy. A physical therapist may be eligible for certification only after several years of clinical experience.

Directors of Physical Therapy (076.121-014) plan, direct and coordinate physical therapy programs and make sure the program complies with state requirements.

WORKING CONDITIONS

Physical therapists are often part of a health care team along with physicians, nurses, social workers, occupational therapists, speech therapists and other specialists. They may work in private and public hospitals, clinics, rehabilitation centers, physicians' offices, schools for the handicapped, colleges and universities, research laboratories, government agencies and patients' homes. Their work is usually indoors in comfortable, well-equipped quarters.

A physical therapist's job can be physically exhausting. In addition to standing for long periods of time, therapists must move equipment and help patients turn, stand or walk. They often have to stoop, kneel, crouch and lift. The average work week for a physical therapist is 8 hours a day, 40 hours a week. Some work on weekends may be required.

Most physical therapists belong to the American Physical Therapy Association or the National Association of Physical Therapists. Members pay periodic dues.

Tools, equipment and materials used may include:

- Exercise tables
- Inclined surfaces
- Stationary bicycles
- Moistpacks
- Walkers
- Whirlpools and hubbard tanks
- Wheelchairs
- Ultraviolet and infrared lamps
- Practice stairs
- Diathermy
- Braces
- Ultrasound equipment
- Crutches
- Low voltage generators
- Parallel bars
- Biofeedback machines
- Pulleys and weights
- Transneural stimulation
- Orthotic and prosthetic devices
- Surface electromyography

You should like:

- Activities that involve direct personal contact
- Activities concerned with the communication of ideas
- Activities of a scientific and technical nature

You should be able to:

- Reason clearly and logically
- Understand the meanings of words and ideas
- See detail and differences in objects, drawings or shadings
- Work skillfully with your hands
- Rate information by using personal judgment or by standards
- Perform a variety of duties that may change often
- Plan and direct an entire activity or the activities of others
- Be patient, tactful, persuasive,

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PHYSICAL THERAPIST

resourceful and emotionally stable to help patients understand their disabilities and treatments

Physically you must:
- Possess good vision and hearing, either natural or corrected
- Coordinate the movements of eyes, hands, and fingers
- Stoop, push or pull
- Lift and carry patients, equipment, tools and materials
- Reach for, handle, feel, and manipulate equipment and patients
- Have good manual dexterity
- Have good stamina

Special requirements:

All states require physical therapists to be licensed. Certification is achieved with graduation from an approved bachelor's degree or post-baccalaureate degree program that includes clinical experience and passing the licensing exam. Most states have reciprocity agreements.

EARNINGS AND ADVANCEMENT

Earnings vary according to the size and type of employer and the therapist's length of employment and level of responsibility.

Earnings:

Nationally, in 1994, physical therapists earned starting salaries of $22,877 a year. Experienced physical therapists employed full time in private hospitals earned an average annual salary of $38,277. Some physical therapists earn more.

Physical therapists employed by the federal government earned an average salary of $32,770 in 1994. Those in supervisory positions earned more than $46,905 annually.

Oklahoma Salary:

Region	Range
Central	15.50-23.00
Northeast	19.00-23.00
Northwest	–
Southwest	6.50-25.00
Southeast	19.00-25.00

Fringe Benefits:

Most physical therapists receive paid vacations, sick leave, hospitalization, life, and disability insurance and educational leave. These benefits are usually paid, at least in part, by the employer.

Career ladder for this occupation may look like this:
- Therapy Department Head
- Supervisor
- Physical Therapist

EMPLOYMENT AND OUTLOOK

There were approximately 90,000 physical therapists employed nationally in 1992. Employment of physical therapists is expected to grow much faster than the average for all occupations through the year 2005 because of rapidly growing demands for rehabilitation services. As new medical technologies save more people, who then need therapy, employment opportunities will increase. The rapidly growing elderly population will also contribute to this demand. Many additional openings will result from replacement needs. An increasing number of employers are using physical therapists to evaluate work sites, develop exercise programs and teach safe work habits to employees in the hope of reducing injuries. New graduates are in great demand.

Oklahoma Employment and Outlook:

In Oklahoma, physical therapists are projected to have 62 job openings annually until the year 2000. These job openings represent new job growth and replacements caused by leaving the occupation, promotions, retirements, etc. In 1990, physical therapists held 929 jobs in Oklahoma. They are expected to hold 1,349 jobs by the year 2000. This is considered a fast growth rate.

Levels of education and training usually needed for this occupation:
- College - bachelor's degree

Many colleges and universities are in the process of changing their programs from a bachelor's degree to a post-baccalaureate degree in physical therapy.

Levels of education and training also available for this occupation:
- College - master's degree

School subjects helpful in preparing for this occupation:
- College Preparatory
- Health Education
- Physical Education
- Physiology
- Algebra
- Geometry
- Trigonometry
- Biology
- Chemistry
- Physics
- Humanities
- Psychology

MORE SOURCES OF INFORMATION

- Amer. Occupational Therapy Association, Inc.
  1383 Piccard Dr.
  P.O. Box 1725
  Rockville, MD 20850-4375

- American Physical Therapy Association
  1111 North Fairfax Street
  Alexandria, VA 22314

- U.S. Physical Therapy Association
  1803 Avon Lane
  Arlington, Heights, IL 60004

RECREATIONAL THERAPIST

NATURE OF THE OCCUPATION

Recreational therapists use medically approved activities to either treat or maintain the physical, mental and emotional well-being of patients. They help patients develop confidence and social skills and assist the patient in adjusting to an illness or disability.

Duties may include but are not limited to the following:

- Observing the physical, mental and social progress of patients
- Contributing information and progress reports for use in meeting treatment goals
- Assisting patients in readjusting recreational needs to activities offered by the community in which they live
- Training groups of volunteers and students in techniques of recreation therapy
- Organizing athletic events, craft workshops, field trips, dances and concerts for patients
- Instructing patients in relaxation techniques
- Instructing patients in calisthenics and individual and group sports
- Developing a treatment plan, leading activities and monitoring a patient's progress

WORKING CONDITIONS

Recreational therapists usually work as a member of an interdisciplinary team that may include a physician, nurse, social worker, psychologist and other rehabilitation professionals.

Recreational therapists' working conditions vary according to the employment setting. In a clinical setting, recreational therapists might work on a ward or in a spacious activity center. In a nursing home, therapists might work in a room equipped with arts and crafts materials.

The job may be physically tiring because therapists are often on their feet all day and may have to lift heavy equipment and participate in activities. Recreational therapists generally work a 40-hour week, although weekend, evening and holiday shifts are occasionally required.

Tools, equipment and materials used may include:

- Arts and crafts materials
- Board games
- Sports equipment
- Camping equipment
- Gardening tools

You should like:

- Working with people of all kinds and all ages
- Coordinating activities for others

You should be able to:

- Inspire trust and respect
- Work as part of a team
- Keep a sense of humor

Physically you must:

- Assist in lifting patients
- Have manual dexterity
- See naturally or with correction

Special Requirements:

A few states regulate this field through certification, and some employers prefer to hire workers who have been certified. Certification is available through the National Council for Therapeutic Recreation Certification (NCTRC), which awards credentials for therapeutic recreation specialists and therapeutic recreation assistants. Certification requirements for specialists include a bachelor's degree and passing a certification exam. For therapeutic assistants, an associate's degree is required.

Opportunities for Experience:

Working as a volunteer with a recreational therapist or volunteer work in a hospital or nursing home may give experience in this occupation.

Methods for Entry:

Methods of entering this occupation include direct application to nursing homes, community centers and hospitals. Positions may also be located by consulting newspaper want ads and contacting state employment offices.

EARNINGS AND ADVANCEMENT

Salaries of recreational therapists vary according to employment setting, educational background, work experience and geographic location. Advancement is chiefly to supervisory or administrative positions.

Earnings:

In 1994, the average annual salary of full-time recreational therapists was $28,816. The range can be $20,423 to start, to over $30,000 with 10 years' or more experience.

In nursing homes, recreational therapists are often classified as activity directors. The average salary of an activity director varies by amount of experience and the size of the institution served.

Oklahoma Salary:

Region	Range
Central	11.00-13.00
Northeast	9.00-13.00
Northwest	--
Southwest	6.50-25.00
Southeast	--

Fringe Benefits:

Depending on the employer, recreational therapists may receive paid vacations, sick leave, life and hospitalization insurance and pension programs. These benefits are usually paid, at least in part, by the employer.

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RECREATIONAL THERAPIST

Career ladder for this occupation may look like this:
- Recreational Therapist Supervisor
- Recreational Therapist
- Recreational Therapist Assistant

EMPLOYMENT AND OUTLOOK

National employment of recreational therapists in 1992 was 30,000. The employment of recreational therapists is expected to grow faster than the average for all occupations through the year 2005 due to anticipated growth of rehabilitation services and long-term care facilities. Job opportunities should be best for those with advanced training and experience.

Oklahoma Employment and Outlook:

In Oklahoma, recreational therapists are projected to have 17 job openings annually until the year 2000. These job openings represent new job growth and replacements caused by leaving the occupation, promotions, retirements, etc. In 1990, recreational therapists held 311 jobs in Oklahoma. They are expected to hold 409 jobs by the year 2000. This is considered a fast growth rate due to the relatively small number of recreational therapists employed in Oklahoma in 1990.

Levels of education and training usually needed for this occupation:
- Technical, junior or community college
- College - bachelor's degree

Levels of education and training also available for this occupation:
- College - master's degree

School subjects helpful in preparing for this occupation:
- College Preparatory
- First Aid
- Health Education
- Physical Education
- Physiology
- Algebra
- Math
- Biology

MORE SOURCES OF INFORMATION
- Nat'l. Council for Therapeutic Recreation Certification
  P.O. Box 479
  Thiells, NY 10984-0479
- American Association for Leisure and Recreation
  1900 Association Drive
  Reston, VA 22091
- National Therapeutic Recreation Society
  2775 S. Quincy St., Suite 300
  Arlington, VA 22206
- American Therapeutic Recreation Association
  c/o Associated Mgmt. Systems
  P.O. Box 15215
  Hattiesburg, MS 39404-5215
- National Employee Services and Recreation Association
  2211 York Rd., Suite 207
  Oak Brook, IL 60521-2371

RESPIRATORY THERAPIST

NATURE OF THE OCCUPATION

Respiratory therapists, also known as *respiratory care practitioners*, evaluate, treat and care for patients with breathing disorders. They work under the direction of a physician to assist or control a patient's breathing, using specialized equipment. Therapists may be called upon to assist with chronic lung diseases, post-surgical care, chest injuries, premature infants, drownings, drug overdoses, heart failure, stroke and shock.

Duties may include but are not limited to the following:

- Reading prescriptions to determine requirements for treatment
- Explaining and demonstrating the use of equipment
- Setting up, maintaining and operating oxygen, gas and mist inhalation equipment and equipment for continuous ventilation
- Taking blood samples
- Administering positive-pressure breathing treatments
- Preparing medications
- Assisting nurses and physicians in respiratory patient care
- Preparing and maintaining a chart for each patient
- Ordering major equipment repairs and new equipment
- Making emergency visits to homecare patients if equipment problems arise

WORKING CONDITIONS

Respiratory therapists usually work in hospitals. They often work under emergency conditions in maintaining or regaining a patient's breathing. They have a great deal of responsibility in the care of critically ill patients and must exercise careful judgment. They are also responsible for maintaining very expensive equipment. The work is stressful.

Respiratory therapists work 40 hours a week. Weekend and evening work, night duty and calls after hours often occur.

Respiratory therapists may belong to an association such as the American Association for Respiratory Therapy. Members usually pay dues.

Tools, equipment and materials used may include:

- Respirators
- Resuscitators
- Incubators
- Charts
- Hand tools
- Pressure and flow regulating Devices
- Oxygen delivery devices
- Gas and aerosol therapy equipment
- Pulmonary function equipment
- Blood gas and gas analysis equipment
- Positive-pressure breathing apparatus

You should like:

- Working with and helping people
- Working with machines and medical techniques

You should be able to:

- Maintain composure in emergencies
- Follow details and instructions accurately
- Work as part of a team
- Work under pressure
- Communicate well
- Solve problems using scientific and mathematical knowledge.

Physically you must:

- Have manual dexterity
- Stand for long periods of time
- Assist in lifting patients and equipment

Special Requirements:

To become a certified respiratory therapy technician, a high school diploma, graduation from an American Medical Association (AMA) approved respiratory therapy technician program (usually a 1-year program), and 1 year of work experience under licensed medical supervision are required. In addition, it is necessary to pass a written examination given by the National Board for Respiratory Care.

To become a registered respiratory therapist, graduation from an AMA-approved respiratory therapist program (usually a 2- or 4-year program), completion of at least 62 semester hours of approved college credit and completion of 1 year of clinical experience under licensed medical supervision are required. Applicants must also pass written examinations given by NBRT.

People who enter this field should be sensitive to patients' physical and psychological needs.

Methods for entry:

Methods of entering this occupation include direct application to hospitals, clinics and nursing homes. Positions may also be located by consulting newspaper want ads and state employment offices.

RESPIRATORY THERAPIST

EARNINGS AND ADVANCEMENT

Salary levels are expanding because there is a limited number of qualified respiratory therapists to meet increased demands.

Earnings:

Respiratory therapists who work full time in private hospitals averaged $14.75 hour, excluding premium pay for overtime and for work on weekends, holidays and late shifts in 1994. This is an annual salary of $28,368. Average earnings ranged from $25,454 to $39,957. Respiratory therapists in hospitals earned a mean salary of $32,275.

Oklahoma Salary:

Region	Range
Central	11.00-13.00
Northeast	6.50-11.00
Northwest	--
Southwest	6.50-25.00
Southeast	--

Fringe benefits

Depending on the employer, respiratory therapists may receive paid vacations, sick leave, life and hospitalization insurance, pension programs, free courses or tuition assistance and uniforms. These benefits are usually paid, at least in part, by the employer.

Career ladder for this occupation may look like this:

- Chief Respiratory Therapist
- Assistant Chief
- Respiratory Therapist Supervisor
- Respiratory Therapist
- Respiratory Therapist Technician

EMPLOYMENT AND OUTLOOK

There were approximately 74,000 respiratory therapists employed nationally in 1992. Employment is expected to grow much faster than the average for all occupations due to the growth of the middle-aged and elderly population. Neonatal and cardiopulmonary care have already emerged as distinct specialties and opportunities appear to be highly favorable for respiratory therapists with the requisite skills.

Very rapid growth is expected in home health agencies, equipment rental companies and firms that provide respiratory care on a contract basis. Most job openings will result from the need to replace workers who transfer to other jobs or stop working altogether.

Job opportunities should be excellent for experienced therapists and for graduates of accredited training programs. The increasing availability of formally trained therapy workers may make entry more difficult for people with neither training or experience.

Oklahoma Employment and Outlook:

In Oklahoma, respiratory therapists are projected to have 47 job openings annually until the year 2000. These job openings represent new job growth and replacements caused by leaving the occupation, promotions, retirements, etc. In 1990, respiratory therapists held 719 jobs in Oklahoma. They are expected to hold 1,033 jobs by the year 2000. This is considered a fast growth rate.

Levels of education and training usually needed for this occupation:

- Technical, junior or community college

Levels of education and training also available for this occupation:

- College - bachelor's degree

School subjects helpful in preparing for this occupation:

- College Preparatory
- First Aid
- Health Education
- Physiology
- Algebra
- Math
- Biology
- Chemistry
- Physics

MORE SOURCES OF INFORMATION

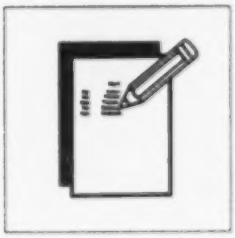
- National Board for Respiratory Care
  8310 Nieman Road
  Lenexa, KS 66214

- American Association for Respiratory Care
  11030 Ables Lane
  Dallas, Texas 75229

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

DAY 8 ACTIVITIES

POSTTEST INSTRUCTIONS



You will need a computer scan sheet or card to record your answers to the following Posttest. Be sure to write your name, the title of the TLA, the date, and the class period on the computer scan sheet or card using a #2 pencil. Use rows 11-25 to record the answers to the Posttest. If your answers will be hand-scored, use a blank sheet of paper to record your answers and number your answers 11-25. Use rows 20-25 on the test card for the spelling test. If the word is spelled correctly, mark (a) on the computer score sheet or card. If the word is spelled incorrectly, mark (b) on the test card. Be sure to use a #2 pencil and make your marks dark. If your answers will be hand scored, use a blank sheet of paper to record your answers and number your answers 11-25.

Get Posttest Questions from your instructor.

When you finish the Posttest, return the test form and the computer scan card or notebook paper to your instructor.

If you complete Day 8 Activities with time left over, you may complete a Skunk Works activity.

TECHNOLOGY EDUCATION
THERAPEUTIC CARE

SKUNK WORKS

BACKGROUND

The term Skunk Works comes from an engineering division of the 3M Company. In the late 1960s, a group of engineers at 3M wanted to design a new product, but the managers of the company would not give them the money for research. So they decided to design the product anyway, then try to convince the company to market it. Whenever the engineers could grab a few extra minutes from their regular assignments, they worked on the new product. In early 1969 they presented it to the marketing division of 3M, and the company has been selling it every since. The product: Velcro fasteners.

SKUNK WORKS CHALLENGE

Choose one of the following Skunk Works activities.

1. Practice range of motion exercises using appropriate terminology.

2. Research therapeutic procedures on the internet or through books in the library and report your findings to your instructor.

3. Try one of the art therapy activities that you didn't select on Day 5.

4. Plan a well-balanced meal using the information sheets for Day 6.